

MD

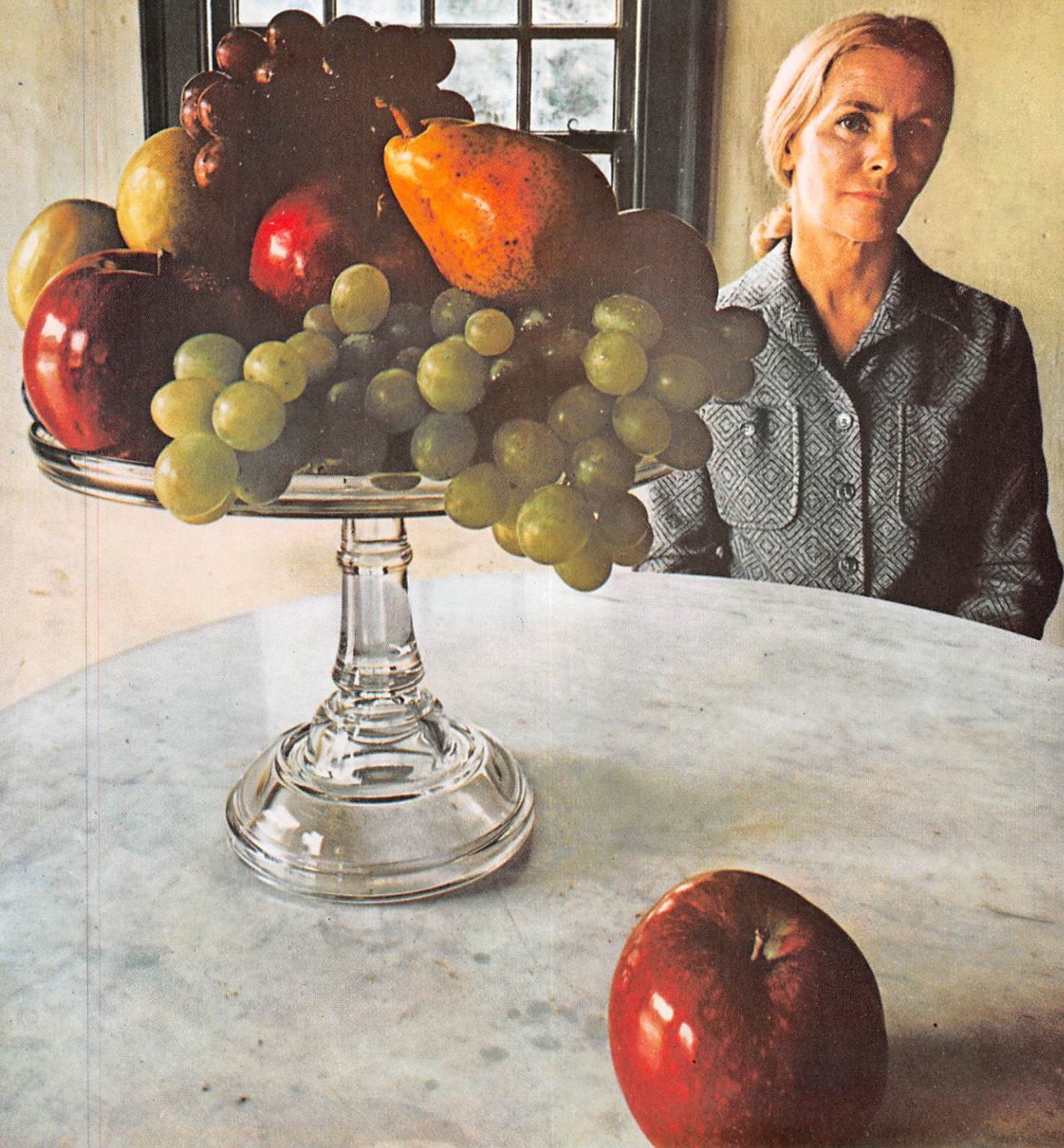


ROBERT R. GREEN, M.D.
45 S. MAIN ST.
HEBER CITY, UT. 84032

THE TRAIN

"Road to Romance"

Still Life





"The rails running

to the horizon were indeed

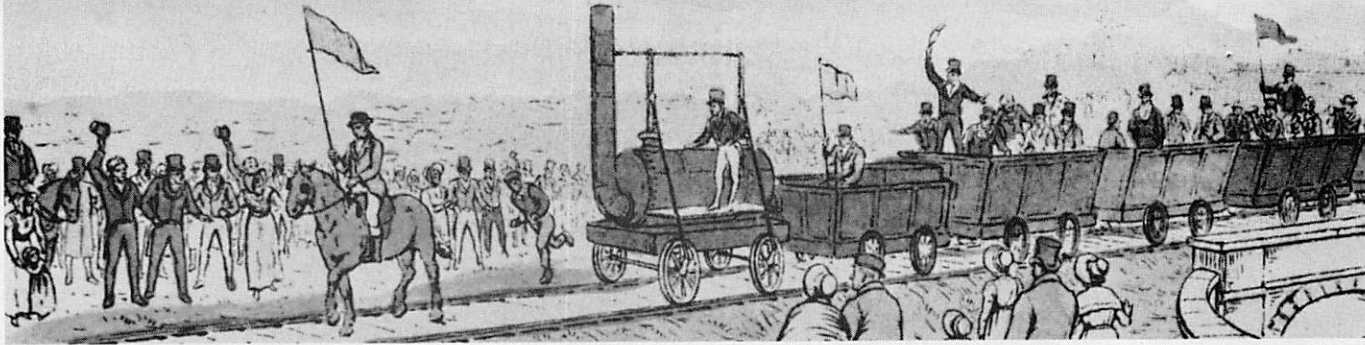
a royal road to

Romance" Lucius Beebe

MD

COVER STORY

THE TRAIN



During the rainy afternoon of September 27, 1825, as a band played and hundreds of people watched, *Locomotion No. 1*, with inventor George Stephenson at the throttle, rolled along a track at nearly ten miles an hour. His goal was to prove that a steam engine could pull a train better than horses over the 38-mile railway from Stockton to Darlington in northern England.

Behind the small engine, which looked like a tea-kettle on wheels, were 34 "waggons" filled with passengers and 12 others with coal and flour. In front rode a horseman with a red flag. With his 90-ton load, Stephenson reached Darlington in 65 minutes, barely faster than the horse-drawn trains that ran on the same tracks.

Although the results of this historic run were not phenomenal (onlookers and passengers preferred the horses), the steam locomotive proved it could work. Only 25 years later the train was viewed as a machine that had conquered the old world and was making a new one. Virgin territories in the United States, Canada, South America and Australia were traversed, cities old and new were developed, and people thought of time and space in entirely different terms.

As engines, tracks and safety devices became more sophisticated, designers concentrated on sumptuous interiors, luring the *haut monde* from their stationary mansions to others on wheels. The most glamorous figures in the world dined, gambled and loved on some of the most spectacular trains ever devised. A new era in art and literature grew up around the train.

BIRTH. More than a century before the emergence of steam locomotive power, coal miners in Cornwall hauled their coals to the river in horse-drawn waggons with wheels fitted to ride on rails. The rails were made of wood, in some cases shod with iron; the horse followed a towpath between them and was able to haul up to ten times the burden of an ordinary cart.

Steam power for railroads in England began earlier than is generally known: in 1700 Thomas Newcomen and Thomas Savery evolved a working steam

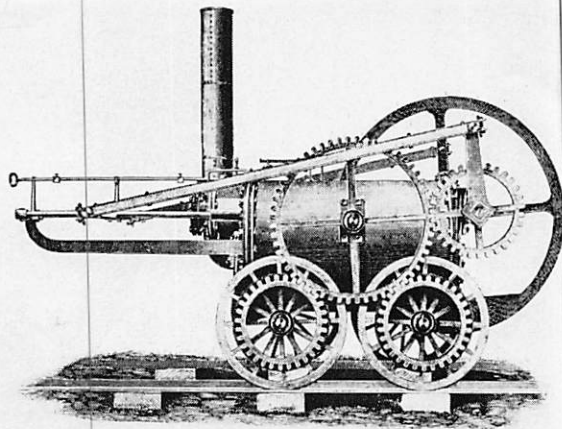
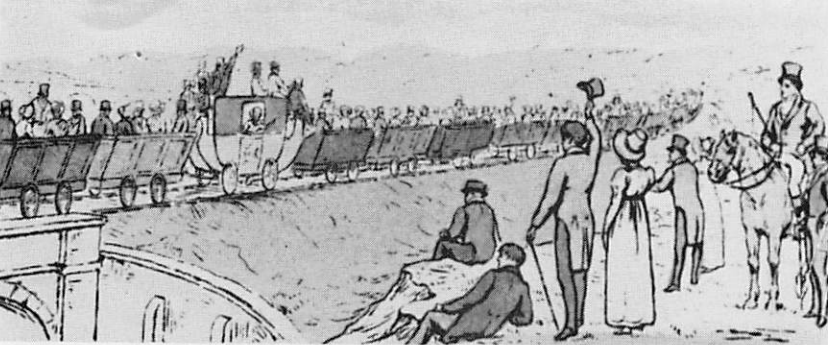
engine for pumping water from the shafts of deep mines. To this day Newcomen is honored in England and America by the Newcomen Society of railway men and engineers. Sixty-nine years later, James Watt patented a number of improvements on this engine and experimented with harnessing steam power to a locomotive; his partners dissuaded him from what they regarded as a visionary and unprofitable venture.

In 1804, Richard Trevithick, a young Cornish mineowner, ran the first steam locomotive on rails. His engine moved at five miles an hour and up a slight grade; it had a boiler six feet long, a return flue that brought the stack over the fire door, and four power-driven wheels. On his second trip, with a heavier load, the track collapsed.

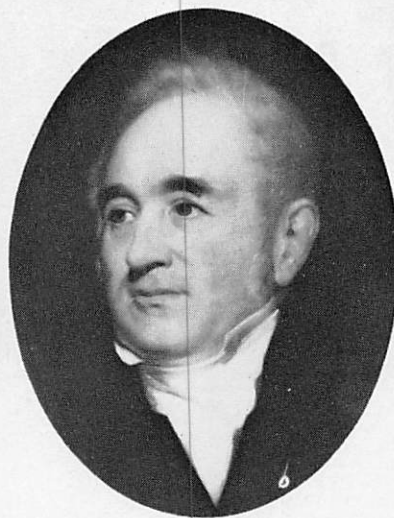
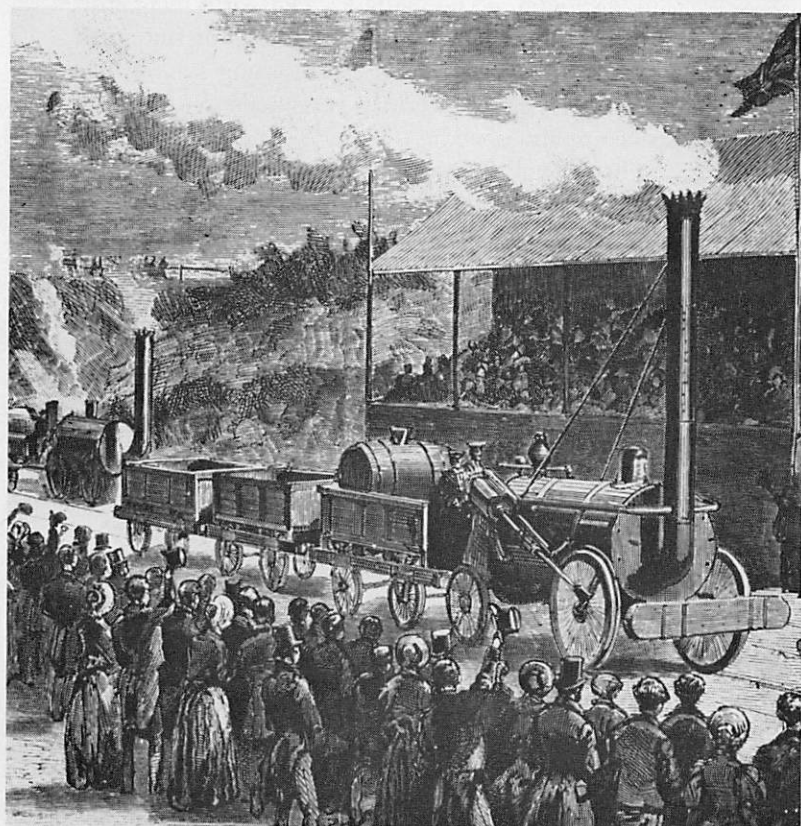
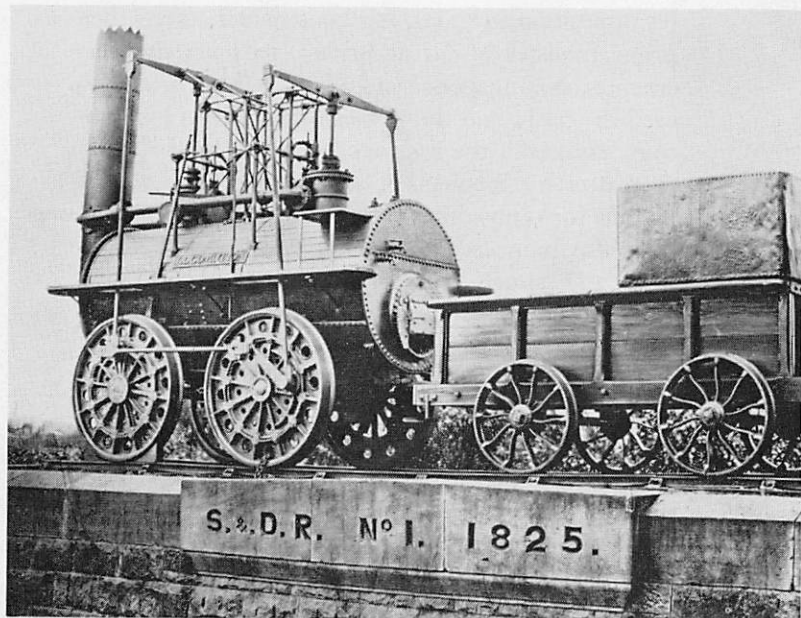
A new type of train was developed in 1812 by John Blenkinsop, who managed a coal mine in a hilly area near Leeds: the locomotive had cogged wheels driving on a rack rail, a system still employed in modernized form on some steep mountain railways. Shortly thereafter appeared the famous *Puffing Billy*, which relied on its own weight for traction by adhesion. It pulled loads at four miles an hour for short hauls near the huge Wylam colliery.

Literally a child of the railway was George Stephenson, a self-taught genius (he was illiterate nearly to adulthood), born beside the Wylam colliery tramroad in 1781; from boyhood he worked around and on engines. His *Blücher* (named in honor of England's ally at Waterloo) was an improvement in speed and durability over previous locomotives, but like many before and after, foundered on the miserable track of the day. It was not until 1820, when rolled-iron rails first appeared, that true railways became possible.

Four years after Stephenson's historic Stockton-Darlington experiment, the directors of the important Liverpool and Manchester Railroad offered a prize of £500 in an engine contest, and Stephenson won it with what became his world-famous *Rocket*. At the week-long trials, the *Rocket* started its run at a speed of 15 mph with a revenue load of 13 tons. The next day it covered 70 miles, an astounding performance for the time and even later, without a



First steam locomotive on rails, above, was used in 1804 to haul coal by Richard Trevithick, a Cornish mineowner. Twenty-one years later the first British railway opened between Stockton and Darlington in the north of England, top left, with great fanfare and a horseman with a red flag guiding the way; steam engine used was Locomotion No. 1, left, built by George Stephenson, below, who worked with engines since boyhood.

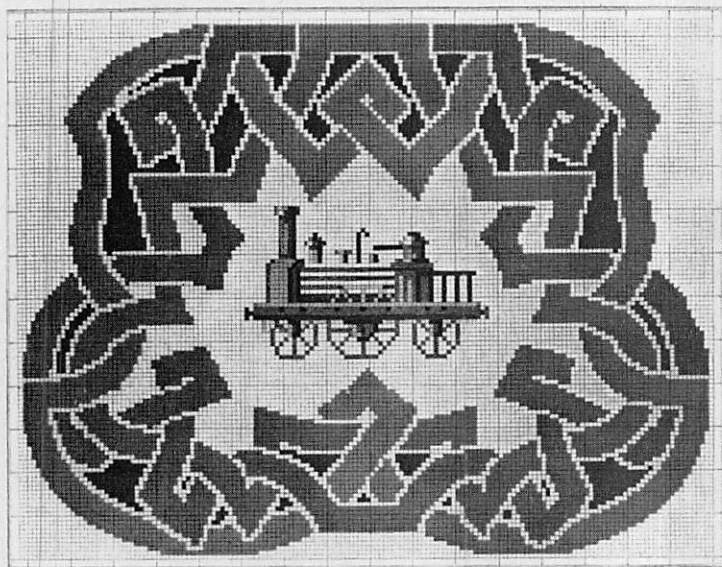


Stephenson, the great pioneer of railroading, in 1815 built the first locomotive to use the steam blast, at about the same time as Sir Humphry Davy devised a miner's safety lamp. In 1829 he won a Liverpool and Manchester Railroad competition, left, with his famous locomotive Rocket.



Reactions of passengers on their first railroad trip were recorded graphically by the French artist Honoré Daumier. In an engraving from an 1872 London publication, opposite, is what is said to be the first railway in operation in Japan.

Below, a published pattern for a 19th-century needlework railway traveling bag. Watercolor, bottom, shows the famous race in 1830 between Peter Cooper's Tom Thumb, one of the earliest locomotives built in America, and a stagecoach horse.

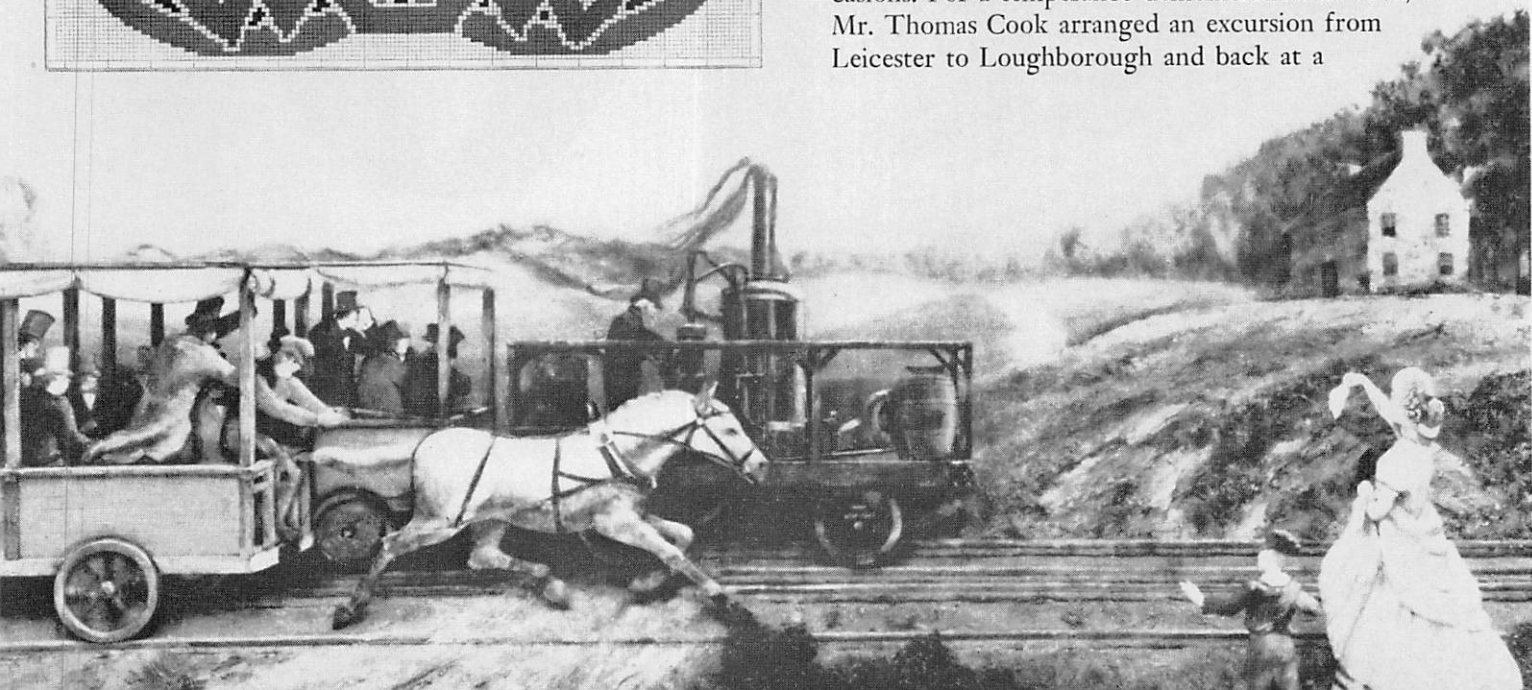


breakdown or even a problem. Altogether, the locomotive achieved an average speed of 14 mph with a load of 42 tons, which led to an immediate order by the company of four engines identical to the *Rocket*.

The trials excited as much public interest as the Derby: orchestras entertained the 10,000 spectators between tests, guests included celebrities of every type, from social leaders to noted scientists and engineers. Even the duke of Wellington, famed for his opposition to trains, felt constrained, as the then prime minister of Great Britain, to open the ceremonies. Newspapers from all over the world covered the trials, and the stories made British locomotives, especially the improved versions built shortly thereafter by Stephenson and his son, Robert, the models for trains on every continent. The Stephensons also pioneered in track layouts, bridges, viaducts and tunnels; when they were called to France, Belgium or Germany to build a railway line, the assignment included everything.

POPULARITY. Beginning with the royal family, people flocked to the railway: prince Albert used it in 1839, the queen in 1842, and she wrote to her uncle Leopold that she was charmed with it. Sidney Smith commented in 1842: "Railroad travel is a delightful improvement in human life. Man has become a bird. . . . The mama rushes 60 miles in two hours to the aching finger of her conjugating and declining grammar boy. The early Scotsman scratches himself in the morning mists of the north and has his porridge before the setting sun. . . . Everything is near, everything is immediate—time and space are abolished."

The timetable appeared, which first made Greenwich time standard throughout the country; then came the "excursion train," on which the masses traveled in large groups at low fares for special occasions. For a temperance demonstration in 1841, a Mr. Thomas Cook arranged an excursion from Leicester to Loughborough and back at a



shilling a head, and thus launched one of the world's great travel agencies.

France, Belgium and the German states built their railway networks on a national and geographic plan, but in the Anglo-Saxon countries fierce competition between private companies was part of railway history. One example: in 1858 the London, Brighton and South Coast Railway opposed the London and South Western Railway's plan to enter Portsmouth by a new direct route. Both hired thugs for battle: there was a fierce engagement at a junction after which the South Western forces, having at first captured the Brighton locomotive which was used to block the route, retired with their own train.

PASSENGER TRAVEL. In 1851 there was an unprecedented movement of people in Britain to visit the Great Exhibition in London; nearly seven million people of all classes took trains, and as one historian put it, the country bumpkins who made the trip and returned were never quite the same again. "This was the railroad's social revolution."

But the poor traveled in such appalling conditions that many died from exposure or suffocation. Humanitarians rose in protest and in 1844, William Gladstone, then president of the Board of Trade, made compulsory the running of trains in which third-class passengers were carried in fully protected carriages, "with sufficient light and air" at a charge of one penny a mile; trains were also required to provide an average speed of not less than 12 miles an hour, so those still riding in the open wagons of fourth-class would not freeze to death on a long slow trip behind crawling freight cars.

The rich had their coaches mounted on flat cars and traveled in them while the horses rode in a special boxcar; some trains had first-class carriages, modeled on coaches. Even for the rich there were no food or sanitary facilities, nor were there corridors or heating. Oil lamps hung from the ceiling provided light.

The only comfortable train of the day (1837) was tsar Nicholas I's special conveyance that carried him from Saint Petersburg to his summer palace at Tsarskye Selo. Some 15 years later Napoleon III had a train of nine intercommunicating carriages built for him which included a dining car, an observation car, a salon, a sleeping car and a portable water-closet. All the cars were luxuriously appointed and became the model for royal trains.

UNITED STATES. Less than five years after Stephenson's *Locomotion No. 1* made its epochal trip, steam railroading was a fact of life in the United States. The first operating train was the *Stourbridge Lion*, an English import, which ran on a former horse track owned by the Delaware and Hudson



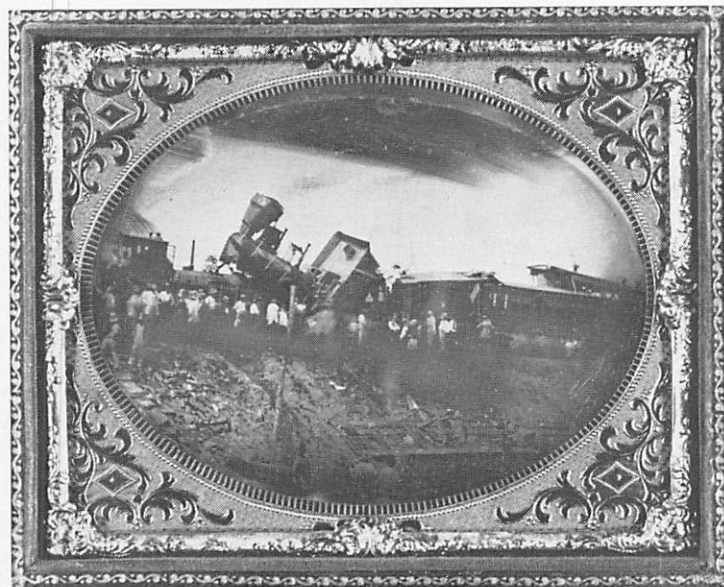
Canal Company between their mines and the end of their canal in Pennsylvania.

In 1830 Peter Cooper, an inventor and industrialist, tried out his own one-horsepower engine *Tom Thumb*, for the Baltimore and Ohio Railroad. It hauled a carload of 36 people at 18 mph on the line's curved track, a feat hitherto declared impossible by engineers. Local stagecoach operators then challenged Cooper to a race against their finest horse. The horse quickly took the lead, but the locomotive soon overtook it. It was far ahead when the belt that operated the fan for the fire slipped from its pulley. As the stream pressure fell, the engine slowed and the horse won the race. But the directors of the Baltimore and Ohio decided that the future lay in steam power, and they announced a competition for another engine. The winner was the *Atlantic*, a grotesque machine with a large central tubular boiler that gave the total effect of a grasshopper; it was the brainchild of Phineas Davis, whose several freak locomotives always worked. One of them later (in 1835) brought the first train into Washington; it was a procession of brightly painted double-deck Imlay coaches on flatcars, the upper levels under colorful canopies, and filled with the cream of Baltimore society in gala dress.

One early rider, a judge, recorded the maiden voyage of the *De Witt Clinton* between Albany and Schenectady: "The train was composed of coach bodies on trucks, i.e., flatcars, coupled together with chains. . . . There being no smoke or spark-catcher

for the smokestack, a volume of black smoke, strongly impregnated with sparks, came pouring back the whole length of the train. The passengers in open carriages put up umbrellas, which immediately burned up. Soon they themselves were on fire and spent the rest of the journey pounding on each other to put out the flames."

The first important American railway, which when finished extended 135 miles from Charleston, South Carolina to Augusta, Georgia, and was the longest railway in the world, opened to traffic section by section. Named the *Best Friend of Charles-*



ton, and run by the South Carolina Canal and Railroad Company, it took its first short trip on Christmas Day, 1830, to a wild celebration that rivaled Independence Day fêtes. The locomotive drew cars of celebrities, with a band and an enthusiastic cannoner, across the startled countryside. The locomotive gave excellent service for six months, then exploded, supposedly because its fireman, in the interest of noise abatement, had tinkered with the safety valve. (He was killed in the explosion.) The line bought other engines, but thenceforth placed a flat-car piled with bales of cotton immediately behind the locomotive to protect passengers from future catastrophes.

FRENZIED PACE. By 1835 rails were being laid at such a frenzied pace that a visiting French economist remarked: "The American public has a perfect passion for railroads." At least 200 railroads were being operated, built, projected, planned or discussed, and

most of them obtained charters. Millions of dollars changed hands for stocks and bonds.

Pictures of locomotives appeared as decorative patterns on china and glassware. A popular sampler pattern showed an engine and tender hauling one car, and the motto "God Speed Thee."

The railroads had an enormous impact on the young nation in the mid-19th century: immigrants poured in, thousands were lured by recruiters to work on the railroads or to settle on the land near the railroads. The descriptive material of the joys of farming in the American wilderness and the rewards of rail-laying bore no relation to reality, but people of all nations, particularly Irish and Chinese, came to work on the tracks. Germans, Finns, Norwegians and Swedes were attracted by the advertisements for great areas of free land. Just as ancient cities grew beside rivers, new American towns sprouted beside the lengthening tentacles of railroad tracks, while older towns in New England and New York were drained of their young people, who went west with the trains.

The pace of the country became faster as well: being "on time" was a new concept that was called "railroad fashion." Earlier, few knew or particularly cared exactly what time it was; now "standard time" was established throughout the nation.

Henry Thoreau ruminated about the trains that passed Walden and wrote: "They come and go with such regularity and precision, and their whistle can be heard so far, that the farmers set their clocks by them, and thus one well-regulated institution regulates a whole country. Have not men improved in punctuality since the railroad was invented? Do they not talk and think faster in the depot than they did in the stage office. . . . Is this a virtue?"

TRANSCONTINENTAL EPIC. The descendants of the early locomotives crossed the prairies, dared the deserts, cut through the High Sierras, withstood Indian attacks and train robberies and joined the two distant coasts of a great nation. With their huge "cow-catchers," majestic smokestacks, clangorous bells, the trains pushed relentlessly forward in this heroic period of American railroading. In 1858 the Central Pacific Company was chartered to build eastward from California, and in 1862 the Union Pacific to build west from Missouri. Some 20,000 men worked on the railroad at an epic pace: they laid an average of ten miles of rail a day, placed 35,000 ties, drove 55,000 spikes, fastened 14,000 bolts. Wrote a thrilled English journalist: "...less

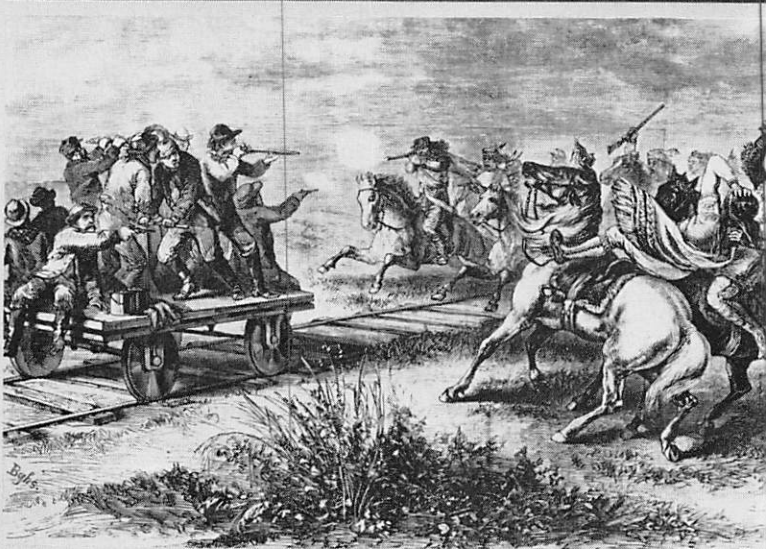
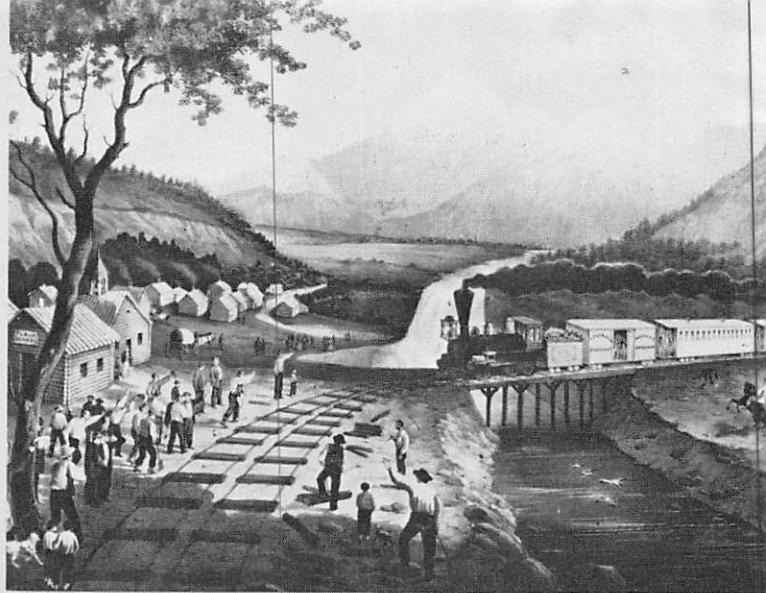
Daguerreotype, above, shows a wreck on the Providence and Worcester Railroad on August 12, 1853. On May 10, 1869, opposite, the first chain of railroads spanning the American continent was completed when rails of the Union Pacific and Central (now Southern) Pacific railroads were joined at Promontory Point, Utah.

At right, Across the Continent, lithograph showing a transcontinental train crossing the Humboldt River, and below it, an engraving shows laborers on a hand-car of the Union Pacific Railroad repulsing Indians.

than 30 seconds to a rail for each gang, and so four rails down to the minute. Close behind come the gaugers, spikers and bolters. It is a grand anvil chorus in triple time—three strokes to the spike.” On May 10, 1869, a golden spike marked the linking from the rails from East and West at Promontory Point, Utah; as the *Jupiter* of the Central Pacific and the 119 of the Union Pacific touched, a signal flashed along the new railway telegraph line. In Omaha and New York, 100 guns boomed a salute, and several poets recorded the event in verse.

COMFORTS OF HOME. Trains for long distances were built with seats on either side of a central corridor, rather than being cut up in compartments as in Europe. Some trains had stoves for heating, lavatories and clerestory roofs for better light and ventilation. But travel still was hot, tediously slow by later standards, and often accompanied by the odors of rancid food or cargo.

Night trips were a nightmare: sleeping cars consisted of three bunks, one above the other. Two people shared the bottom and two the middle bunk. The top bunk barely had room for one person; if the train swayed or bumped, he often was hurled to the floor. Passengers below slept head to foot and seldom removed their boots.



George Mortimer Pullman became determined to make trains comfortable. A former building contractor, he traveled a great deal in discomfort, and after hearing about the luxuries available to such sovereigns as Napoleon III, he went into the business of opulent travel. At first no railroad company would buy his luxurious *Pioneer*, with its black walnut woodwork, rich Brussels carpet, comfortably upholstered seats (which converted into comfortable beds), and fine linen. It cost \$20,000 and was so wide that platforms, tunnels and bridges would have to be altered to accommodate it.

In 1865 it was made part of president Abraham Lincoln's funeral train (the necessary clearance adjustments were quickly made) and shortly thereafter General Ulysses S. Grant hired it for his personal use for a journey home. The train soon went into regular service, and one line after another cleared the way for it. Pullman followed *Pioneer* with similar cars, all the last word in safety as well as comfort.

By 1868 travelers had a wide choice of food, from ten-course dinners to snacks served hastily at railway stations. Pullman's first dining car the *Delmonico* appeared in the United States in 1868, with a twin model on the Great Western Railroad of Canada. Four years later Pullman had 500 sleeping, drawing-room and "hotel cars" on the rails and was building three new ones a week. His army of discreet Pullman porters who responded courteously to every beck and call became an American institution.

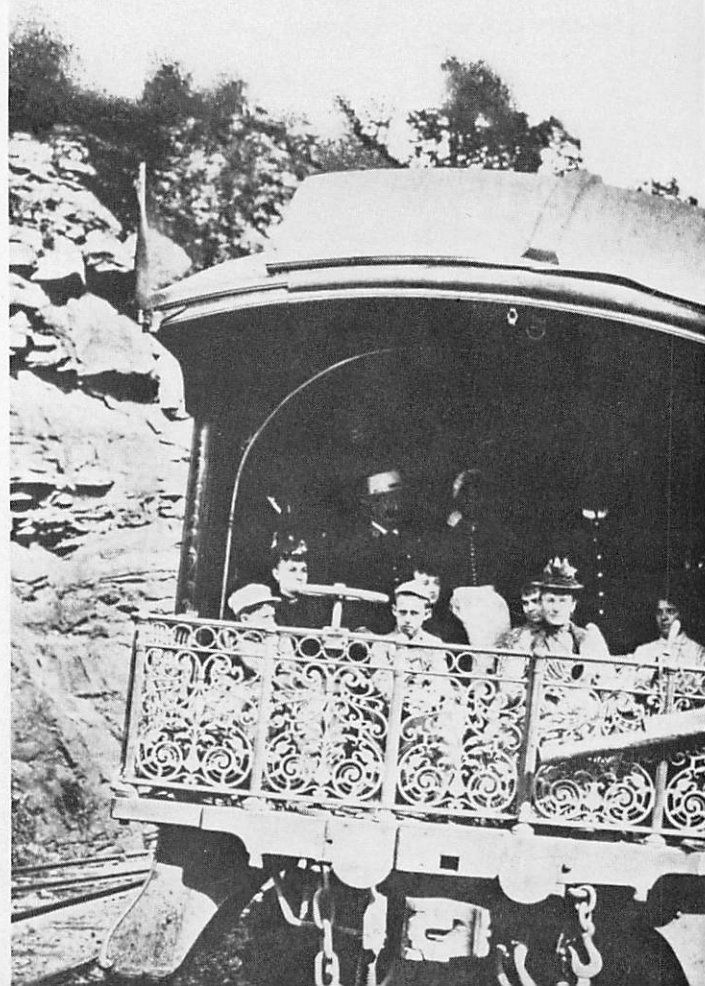
A full-course dinner, which always included a choice of chops, buffalo, elk, grouse or beefsteak in the main course, and a variety of appetizers and desserts, cost one dollar. Beyond Omaha, the dining car was removed, but in the stations under the control of the train managers, the standard of excellence was maintained, and sufficient time was allowed to eat.

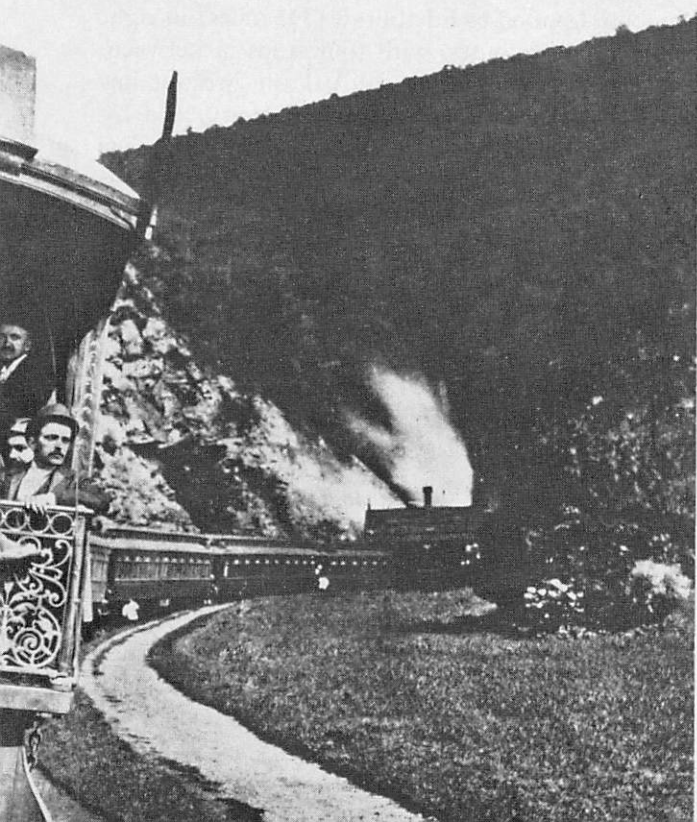
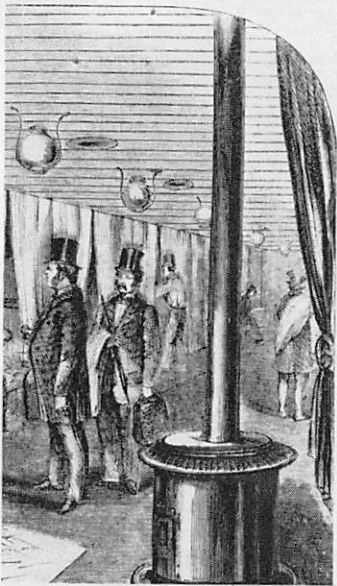
In the days of fabulous personal fortunes, from the mid-1880s to the stock market crash of 1929, the private "palace car" was the mark of opulence and was owned by every millionaire in the United States. George Pullman himself owned two, gigantic in length, one fitted with a pipe organ and with chandeliers in every compartment.

An owner used his private car about 120 days a year; the rest of the time he parked it in a railroad yard at \$25 for the first week, \$12 a day thereafter. An over-all estimate which included the services of a chef, steward and waiter, food for guests and crew while the car was in use, and tips to station and yard masters, totaled about \$125,000 (not including the car's initial cost) for the first year.



Three-tiered berths and a wood-burning stove were features of the Webster Wagner sleeping cars, above, used on Vanderbilt railways. Observation platform was a gala setting for a 1925 departure from Grand Central Station, New York, opposite, and provided passengers on the Pennsylvania Limited en route to Chicago in 1893 with a thrilling view of Horseshoe Curve.





In 1874, in a historic reverse, two British railway companies imported Pullman cars from the United States; five years later the first full-fledged diner was in service in Britain, on the Great Northern Railway between London and Leeds.

TRAIN CULTURE. The proliferation of train travel from 1865 to 1916 enriched America's vocabulary: whistle stop, across the tracks, asleep at the switch and jerkwater town are only a few of the phrases inspired by trains. The legend of Casey Jones thrilled generations of young people; poems and folk songs appeared in the hundreds, and even today, "Working on the Railroad" is sung by children who may never have seen a railroad except on television. The first commercial motion picture with a story to tell was *The Great Train Robbery*, which was followed by music-hall dramas, Broadway plays, and numerous film comedies and thrillers about trains. In art, Winslow Homer and Joseph Pennell captured the beauty and power of the great 19th century models, while Currier & Ives' prints about trains were among their most popular.

WAGONS LITS. Edwardian elegance and Hapsburg charm were the hallmarks of the *Compagnie Internationale des Wagons Lits*, founded in 1876 by Georges Nagelmackers, a Belgian engineer whose ideas were inspired by a Pullman ride across the United States. His dream was to set up a Continental version of the Pullman Company, with luxurious trains speeding from one end of Europe to the other. What made his scheme seem impractical was that all European railroads were state-operated, and many borders were tense; it was a time when visas were checked and rechecked, and passengers were wound around with bureaucratic red tape. Yet in only two years the dynamic Nagelmackers had cut through all this and signed up 23 countries. The first all-sleeper train, the *Blue Train*, ran between Calais and Nice, and it has operated ever since, through wars and other disasters.

THE ORIENT EXPRESS. The inaugural run on June 5, 1883, was a memorable 90-hour, 1800-mile journey from Paris to Constantinople, during which royal passengers (king Charles of Rumania and sultan Abdul Hamid II of Turkey) nibbled caviar sandwiches washed down with champagne for breakfast, and even the stolid correspondent of the *London Times* was said to have danced wildly to the music played in the dining car. Several reporters on the trip wrote books about it that became popular, and soon the train was an incomparable status symbol, whose passengers included Russian grand-dukes, Balkan rulers, millionaires of various origins, artists and other celebrities, and such royal mistresses as Katharina Schratt, noted actress and intimate of emperor Franz

Josef. Diplomatic couriers used the train with a complement of spies among the fun-loving, free-spending *belle époque* characters.

Mystery writers found the opulent train and its extraordinary passengers a perfect subject. Although no one in reality ever was murdered on the train, E. Phillips Oppenheim, Agatha Christie and Graham Greene made the *Orient Express* a center of murder and intrigue, as did Ian Fleming years later when he put James Bond on it for a hair-raising adventure in *From Russia, with Love*. The train's most famous movie role was in the Alfred Hitchcock thriller *The Lady Vanishes*.

The lurid pre-World War I tabloids loved to write about sex and sin on the train. One paper summed it up with the phrase "everyone on the *Orient Express* had a veiled mystery in his past and a sinister purpose in his future."

The *Orient Express* was the archetype of superb travel: its gorgeous wagon-lits, decorated with velvet, damask, cut-glass, bone china and inlaid precious woods, carried the world's nabobs along a scenic route that began in Paris and included Lausanne, the Simplon tunnel through the Italian Alps, Milan, Venice, Trieste, Zagreb, Belgrade, Sofia, Constantinople. The menus included the specialties and wines of each country through which the train passed. Since there were no more than 50 passengers (not including personal servants) to a run, the conductor knew everyone by name, and spoke in seven languages.

The food and service compared with the best in Paris, but even so, some of the gentry from central Europe ordered their meals put aboard by Sacher's in Vienna. Others brought their own silk sheets to be placed over the elegant linens of the *Orient Express*, which ceased operation in 1962 having put luxury on wheels for almost 80 years.

THE BLUE TRAIN. At 8:45 p.m. the *Train Bleu*, the world's oldest and most famous crack deluxe train will leave Paris for a 700-mile overnight trip that will deposit many of its passengers at Cannes, Nice and Monte Carlo the next morning.

In its heyday, with its handsome locomotive and

ornate cars, it carried the same class of passengers (often the same people) as the *Orient Express*; their sole reason for making the trip was to gamble at the famous casino. It is not the fastest train in France: the famous *Mistral* takes two hours less to go from Paris to Nice. But as it has been observed: the *Blue Train* makes up in elegance and nostalgia for what it lacks in speed and efficiency.

An all-sleeper train is painted royal blue with gold lettering; it still belongs to the Compagnie Internationale des Wagons Lits, except for the engine and baggage cars which are the property of the French railroads. Two of the sleepers have special one-person compartments and two are tourist cars with double compartments for 36 people, a change from ten passengers in private rooms. In tourist class the passengers pay second class fare with their bed tickets, a revolution, since for nearly a century the train was strictly first class. The coaches provide the softest ride on the whole train because they are suspended on air cushions.

The personnel tries to maintain the old aristocratic tradition of service but they find it hard with the bourgeois holiday crowds that now jam the train. The most beautiful cars date from 1910: the dining car and the bar car. The company purposely left them in their faded splendor, which the employees call "*ancien style anglais*," because they are as cozy and comfortable as an old-fashioned English pub.

THE SCOTSMAN. A beautiful Victorian train, with the handsome paneling, polished metal, ornate plumbing ceramics, ivy leaves etched on frosted glass and all the other adornments dear to the hearts of the English, the *Flying Scotsman* became a crack express train by the turn of the century: it made the trip from London to Edinburgh (392 miles) in eight hours and 20 minutes, with four stops in between. During the reign of Edward VII the greatest improvement in the coaches was electricity, and by the 1920s the train had acquired a news and magazine service, a ladies' boudoir and a hairdressing compartment for men and women.

In 1969, the famous green steam locomotive of the Edwardian period, the *Flying Scotsman* came



to the United States to run on American tracks; it traveled from Boston to Houston, a distance of 2251 miles, pulling nine cars, also special English types.

The train is owned by a British millionaire named Alan Pegler, who takes it to different countries so people can see what a great old English train looked like. The nine cars include the only observation car in the world serving draft beer; two Pullmans used by Winston Churchill during World War II; a brake van; a passenger coach and four freight cars especially designed to carry racing pigeons.

In its journey through the United States it passed long stretches where steam locomotives had not been seen for more than three decades. It also was the last passenger train to enter Dallas, which had recently abandoned train service. The modern *Flying Scotsman*, a nonstop diesel train, makes the trip from London to Edinburgh in five hours, forty-five minutes.

AMERICAN CRACK TRAINS. Until about 1930, passengers constituted a major source of railroad revenue and a carrier's reputation rose and fell on the quality of its food and the splendor of its club cars. In the golden age of steam transport, to have ridden on such Pullman "flyers" as the *Broadway Limited* or the *Twentieth Century Limited* was the ultimate in distinction.

Perhaps the most elegant of them all, and there were many with marvelous names (the *Green Devil*, the *Panama Limited* from Chicago to New Orleans and the *Rocky Mountain Rocket*), was the *Twentieth Century Limited*.

Launched in 1902, it boasted three Pullman sleepers, a buffer car and diner, barbershop, ladies' maids, valet and stenographer, and electric light in all cars generated from the axle, a startling innovation. More and more cars were added, until by the 1930s, the *Century* sometimes ran in seven sections of sixteen cars each in one direction only, to or from New York or Chicago.

The train always ran in the grand manner: before its departure from Grand Central Station a crimson carpet was laid and news photographers crowded around to snap the celebrities. Fresh flowers for the

Young woman and convivial strangers, opposite far left, share a compartment on a Trans-Siberian train where men and women are indiscriminately put together. Wide-windowed car with upholstered swivel seats, opposite, is the observation car of British Railways' luxury Devon Belle. In attendance on his compartment passengers, above, is a trainman on the fabled Orient Express, archetype of superb travel featured in books of intrigue and films such as The Lady Vanishes, and Orient Express, 1934, right.



Among AMTRAK's efforts to win back railroad passengers in the United States are attractive new uniforms for passenger representatives, right. In a new improved service such as the "auto-train" between Washington and Florida passengers are provided with overnight facilities and their automobiles are loaded onto special freight cars.



Century's dining cars cost \$2000 monthly, while the table butter came from blooded Holsteins bred on an exclusive Vanderbilt estate in Vermont.

The passengers included all the biggest names in finance and entertainment; many, including Ethel Barrymore, took their personal servants despite the train's famous help. The *Century's* secretary knew the identity of every passenger: he served as "chief of communications and conveniences," posted urgent telegrams, notified the diner stewards of special food preferences, helped drunken tycoons into bed.

Upper and lower berths still were used by the wealthy until the 1930s; drawing rooms were only for invalids, newlyweds, businessmen like J. P. Morgan who wanted to conduct secret financial conferences en route, or temperamental rich actresses. In 1937 the new *Twentieth Century Limited* was

an all-room, all Pullman train, the first in service in the United States. The streamlined train with its rubber draft gear, tight-lock couplings, air conditioning, piped music and ultramodern decor was regarded as a marvel.

Shortly thereafter the Pennsylvania Railroad introduced similar innovations in its rival crack train the *Broadway Limited*. This also added such amenities as complimentary coffee with the morning papers at breakfast and hot doughnuts served in specially heated copper containers.

As late as the 1960s the *Broadway* was maintained, operated and patronized in the old aristocratic manner. The management spared no expense to make it luxurious, and its passenger list carried the top names in society, the professions and business. Contrary to the trend toward downgrading passengers which helped end the lives of other great carriers, the *Broadway* continued to build patronage and add new cars. Even in the jet age its success seemed to refute the condition that speed alone was the goal of American travelers; it took 16 hours to reach Chicago, but its amenities kept the passengers loyal to it.

THE CHIEF. Famous for its food and Hollywood celebrities, the Santa Fe's *Chief* and its successor, the ultramodern *Super-Chief*, also were among the most elegant and comfortable of trains. In the 1940s, Frederick Wakeman's *The Hucksters*, was a sensational bestseller about romance in the *Chief's* drawing-rooms and compartments, with names of famous stars only thinly disguised.

TRANS-SIBERIAN RAILWAY. A far cry from American crack transport is the Trans-Siberian Railway, the longest stretch of track on earth: nearly 6000 miles from Moscow to Vladivostok. Its construction was an engineering phenomenon even more dramatic than that of America's transcontinental railway. It was built by convicts and exiles, in temperatures that could vary fifty degrees in one day, across barren plains and swamps, through great mountain ranges and dense virgin forests. In 1891 the first spike was driven in Vladivostok; in 1904 the single stretch of track reached Moscow.

After the Revolution, the government modernized the railroad and made great efforts to settle the vast empty lands along the track. Established was a special Railroad Institute to study the unique engineering and routing problems of the lengthy line. Today an express leaves Moscow for the Pacific Coast every 24 hours. There are more than 1000 towns and villages strung along its length, many of which are jumping-off points for pioneers, prospectors and scientists; there also are several large new cities.

The train consists of tourist class and first class compartments, old, but clean and comfortable. It

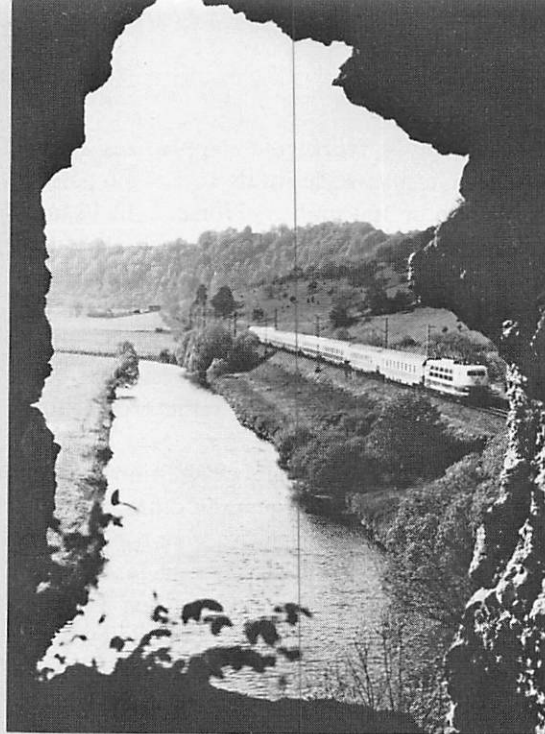
travels through Siberia at 40 mph and the journey takes seven days through seven time zones. An American who made the trip recently found it bearable except when a steam locomotive was put on and smoke and soot came pouring through, a reminder of the American Wild West.

The last leg of the trip is the best: air-conditioned cars are put on, speed increases, service improves and there are double compartments, showers, sofas, ornate lamps, mahogany paneling, plush carpets.

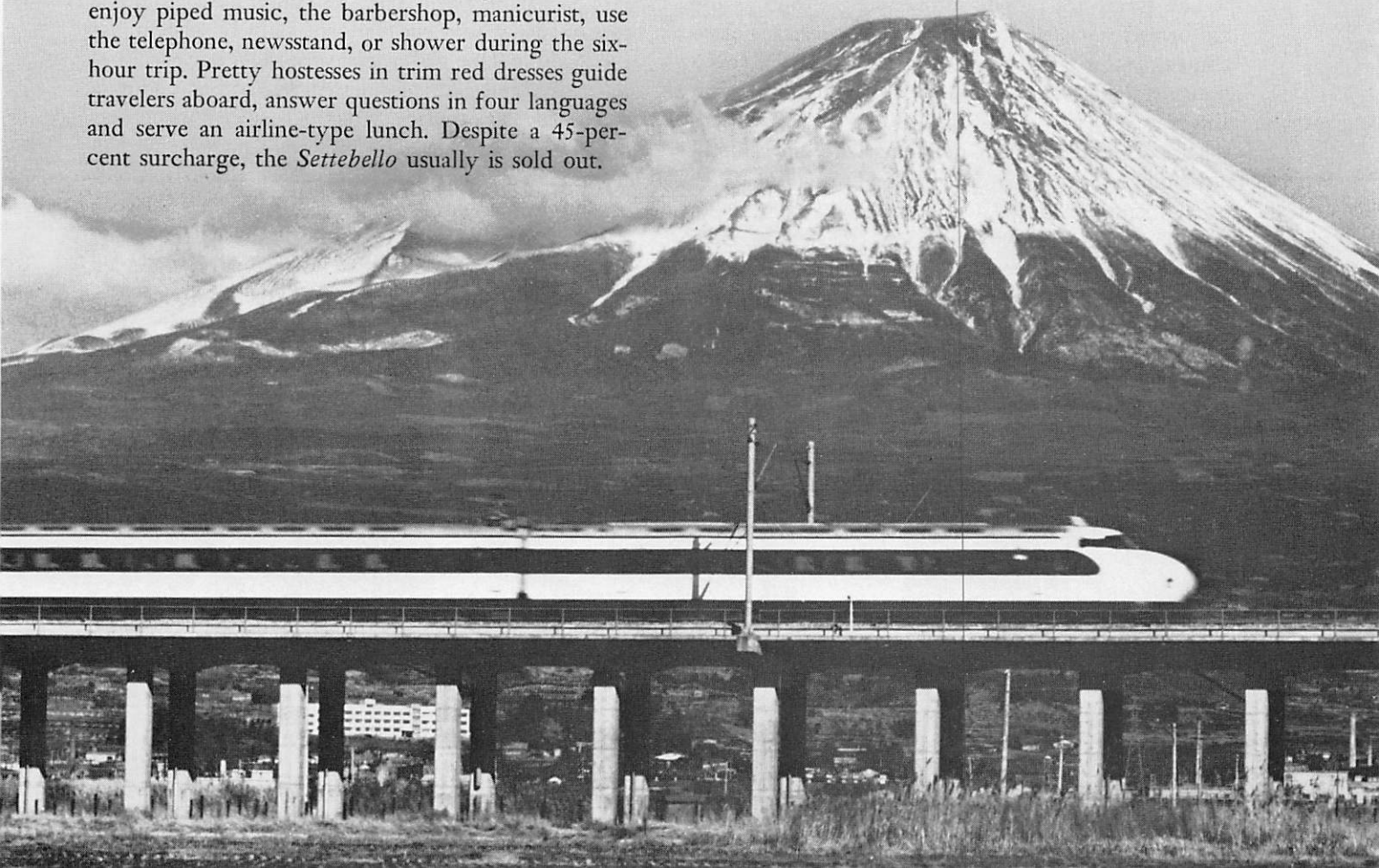
A unique feature of the railway is its system of special trains which twice a month bring services to isolated hamlets along the route. The trains contain specialists for medical and dental care as well as cars well-stocked with consumer goods.

RAILWAY RENAISSANCE. Although American railroads fell on hard times after long-distance travel changed to planes and short-haul traffic took to the highways, in several nations abroad railroading has not lost the battle with the automobile, bus and plane. Every year new super-expresses speed passengers across the countryside; they often outdistance planes, counting travel time to and from airports, and they usually are faster, smoother, safer and more comfortable than cars. From the Arctic Circle to the Mediterranean, from the Atlantic to the Adriatic, a 13-nation, 100,000-mile network links the major cities of western Europe.

Italy's famous *Settebello*, an electric-powered daytime special, whips along between Rome and Milan at 98 mph. It carries only 160 passengers, who can enjoy piped music, the barbershop, manicurist, use the telephone, newsstand, or shower during the six-hour trip. Pretty hostesses in trim red dresses guide travelers aboard, answer questions in four languages and serve an airline-type lunch. Despite a 45-percent surcharge, the *Settebello* usually is sold out.



New high speed trains reduce travel time and they emphasize comfort and convenience for passengers while offering scenic delights that have always attracted people to train travel whether in Germany, above, or on Japan's New Tokaido Line.



West Germany's *Rheingold* emphasizes speed, comfort and German-style meals to attract passengers on its dash at 100 mph to Holland. In France, the superb *Mistral* barrels along between Paris and Nice. These two trains are now part of the spreading deluxe day-coach system, the Trans-Europe Express, which offers speed, service, and comfort at a price. Despite the high fares, the express-train business is booming and has drawn traffic from short-distance airlines.

JAPAN. In the 1950s, when congestion became chronic between Japan's burgeoning cities, the government had to decide whether to give top priority to an expanded intercity flight system, a highway network, or railway express lines which in some cases would parallel existing train routes. They chose the last, more revolutionary course, because land was too precious for many more airports, highway congestion already was a serious problem and the old railroads always could be used for local traffic.

Today Japan operates the world's most modern railroad system; its New Tokaido Line, which runs parallel to the famous Old Tokaido Line from Tokyo to Osaka, boasts the world's fastest train, a cream, buff and blue air-conditioned "bullet express" that averages 103 mph and makes the 322-mile run in three hours and ten minutes. Since it opened in October, 1964, it has carried more than 400 million passengers in comfort; now with 107 trains running each way, it transports some 230,000 people daily.

The trains are highly automated: as soon as the motorman starts the engine, computers at a Tokyo control center take over. They regulate speed (even figuring the effect of wind velocity), stop the train automatically at stations, slow down in areas where repairs are under way. Under construction is a still more modern line (scheduled to be finished in 1975) to augment rail service between Osaka and Fukuoka and beyond. The expresses on this line will be even faster (maximum speed: 186 mph), quieter, smoother and more automated.

AMTRAK. The railroad renaissance has yet to have much impact on the United States, where most pri-

vate lines long ago surrendered by default to the airlines and automobiles. In 1910 trains carried more than 95 percent of intercity traffic; in 1970 they carried less than two percent.

Last year a quasi-governmental agency, the National Railroad Passenger Corporation (AMTRAK), took over the fragments of what once was the world's greatest railway network. Among the few good trains still running: the *Super-Chief* and the *Broadway Limited*. AMTRAK received a \$40 million federal grant, \$100 million in government guaranteed loans, a promised \$197 million in entry fees from railroads turning over their passenger business. But it also inherited the general railroad reputation for shoddy service and shrinking schedules that turned away passengers in droves.

So far, AMTRAK shines in the so-called Northeast Corridor, the 430-mile stretch from Boston to Washington. Between New York and Washington, where the fast, clean, modern *Metroliner* runs once an hour, the number of people riding trains rose 21 percent this year. After AMTRAK cut the fares on its splendid turbo-train from New York to Boston, the number of passengers on that route rose 60 percent. But elsewhere across the country the trains remain almost as empty as before.

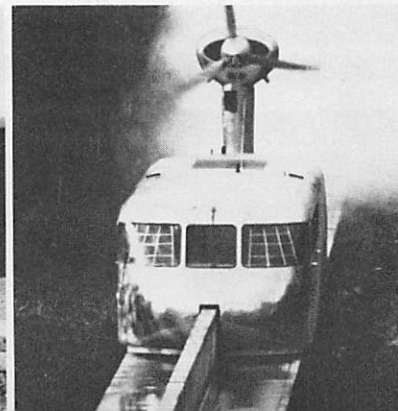
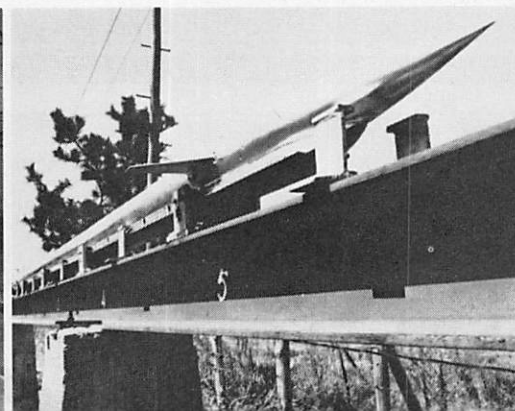
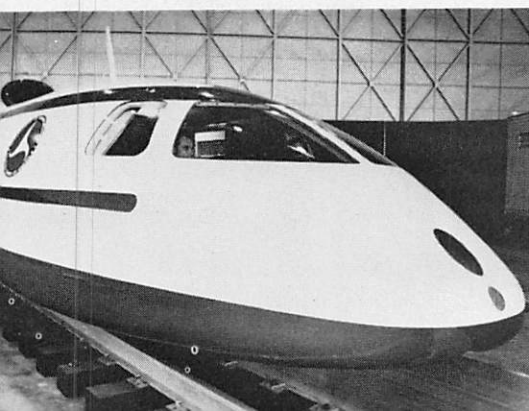
Some transportation authorities say that Americans are wed to planes and cars and never will divorce them. Others, pointing to Europe and Asia, insist that efficiency, comfort, speed and service will lure passengers back. They also point closer to home to Canada, where the national railway system has successful deluxe turbo-trains speeding between major cities, and fast continental trains that compare in comfort and service with the best in Europe.

For years also, train-riding Canadians who wished to take their cars on holidays with them have enjoyed the "auto-train system" (just initiated between Washington, D.C. and Orlando, Florida), in which the automobiles are parked in specially equipped freight cars attached to the passenger trains.

SUMMING UP. Fabulous past, interesting future.



Some recent experimental equipment in the railroads' quest for increasingly fast yet safe rolling stock includes, from left, an American rail car designed to operate at speeds up to 250 mph, a Japanese aerojet train expected to reach a speed of 600 mph, a French aerojet monorail train with an average speed of 186 mph.



The fact is that Gram-negative *H. influenzae*—unresponsive to many commonly-used antibiotics—is an important respiratory pathogen. It frequently causes otitis media, sinusitis, tracheobronchitis in children, sometimes produces laryngitis and complications of the flu in both adults and children, and

often complicates chronic obstructive pulmonary disease.

With Polycillin as one of your first-line respiratory antibiotics you have an agent that's not only among the most effective available against susceptible *H. influenzae*, but also controls common susceptible Gram-positive respiratory pathogens. (Penicillinase-producing staphylococci are resistant.)

Well-tolerated Polycillin shares the classic safety of penicillin G and V, with no direct organ toxicity reported to date; however, as with any penicillin, serious allergic reactions, including anaphylaxis, can occur. Convenient dosage forms for young and old—including a pleasant-flavored oral suspension—make Polycillin easy for you to prescribe, easy for your patients to take.

THE PENICILLIN THAT TAKES A POSITIVE STAND AGAINST GRAM-NEGATIVE *H. INFLUENZAE*, TOO. **POLYCILLIN[®]** (AMPICILLIN TRIHYDRATE)

BRIEF SUMMARY OF PRESCRIBING INFORMATION. For complete information consult Official Package Circular. (15) 6/15/70.

Indications: Infections due to susceptible strains of Gram-negative bacteria (including *Shigellae*, *S. typhosa* and other *Salmonellae*, *E. coli*, *H. influenzae*, *P. mirabilis*, *N. gonorrhoeae* and *N. meningitidis*) and Gram-positive bacteria (including streptococci, pneumococci, enterococci and nonpenicillinase-producing staphylococci). Use parenteral drug only in severe infections or in patients unable to take oral medications. Culture and sensitivity studies should be performed. Indicated surgical procedures should be carried out.

Contraindications: A history of allergic reactions to penicillin.

Warning: Anaphylaxis may occur, particularly after parenteral administration and especially in patients with an allergic diathesis. Check for a history of allergy to penicillins, cephalosporins or other allergens. If an allergic or anaphylactic reaction occurs, discontinue ampicillin and institute appropriate treatment.

Usage in Pregnancy: Safety for use in pregnancy is not established.

Precautions: Mycotic or bacterial superinfections may occur. Cases of gonorrhea with a suspected primary lesion of syphilis should have darkfield examinations before receiving treatment. In all other cases where concomitant syphilis is suspected, monthly serological tests should be performed for a minimum of 4 months. Assess renal, hepatic and hematopoietic function intermittently during long-term therapy.

Adverse Reactions: Untoward reactions include: glossitis, black "hairy"

tongue, nausea, vomiting and diarrhea, skin rashes, urticaria, exfoliative dermatitis, erythema multiforme and anaphylaxis (usually with parenteral administration). Anemia, thrombocytopenia, thrombocytopenic purpura, eosinophilia, leukopenia, and agranulocytosis have been noted, are usually reversible and are believed to be hypersensitivity phenomena. Moderate elevations in SGOT have been noted.

Usual Dosage: Adults—250 or 500 mg. q. 6h. (depending on infection site and offending organisms). Children—50-100 mg./Kg./day in 3 to 4 divided doses (depending on infection site and offending organisms).

Bacterial Meningitis—150-200 mg./Kg./day parenterally in 6 to 8 divided doses. **Septicemia—**150-200 mg./Kg./day parenterally. Children weighing more than 20 Kg. should be given an adult dose when prescribing orally. In parenteral administration, children weighing more than 40 Kg. should be given an adult dose. Beta-hemolytic streptococcal infections should be treated for at least 10 days.

Supplied: Capsules—250 mg. in bottles of 24 and 100. 500 mg. in bottles of 16 and 100. For Oral Suspension—125 mg./5 ml. in 60, 80, 100 and 150 ml. bottles. 250 mg./5 ml. in 80, 100 and 150 ml. bottles. Chewable Tablets—125 mg. in bottles of 40. Pediatric Drops—100 mg./ml. in 20 ml. bottles. Injectable—for I.M./I.V. use—vials of 125 mg., 250 mg., 500 mg., 1.0 Gm., and 2.0 Gm.

A.H.F.S. Category 8:12.16

BRISTOL

BRISTOL LABORATORIES

Division of Bristol-Myers Company, Syracuse, New York 13201



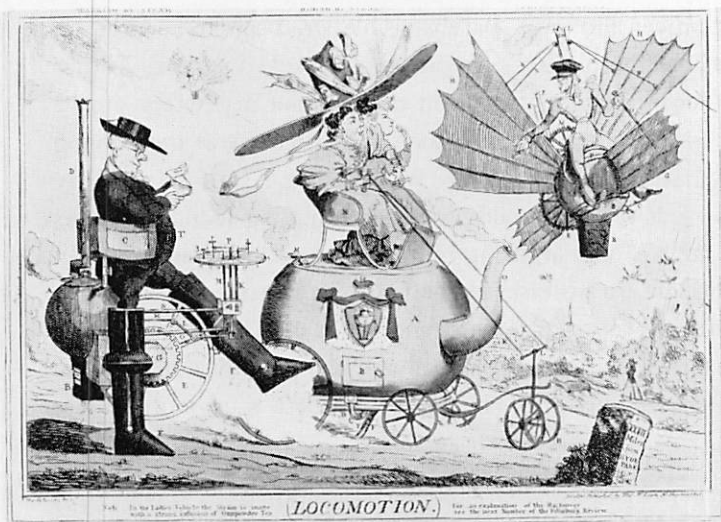
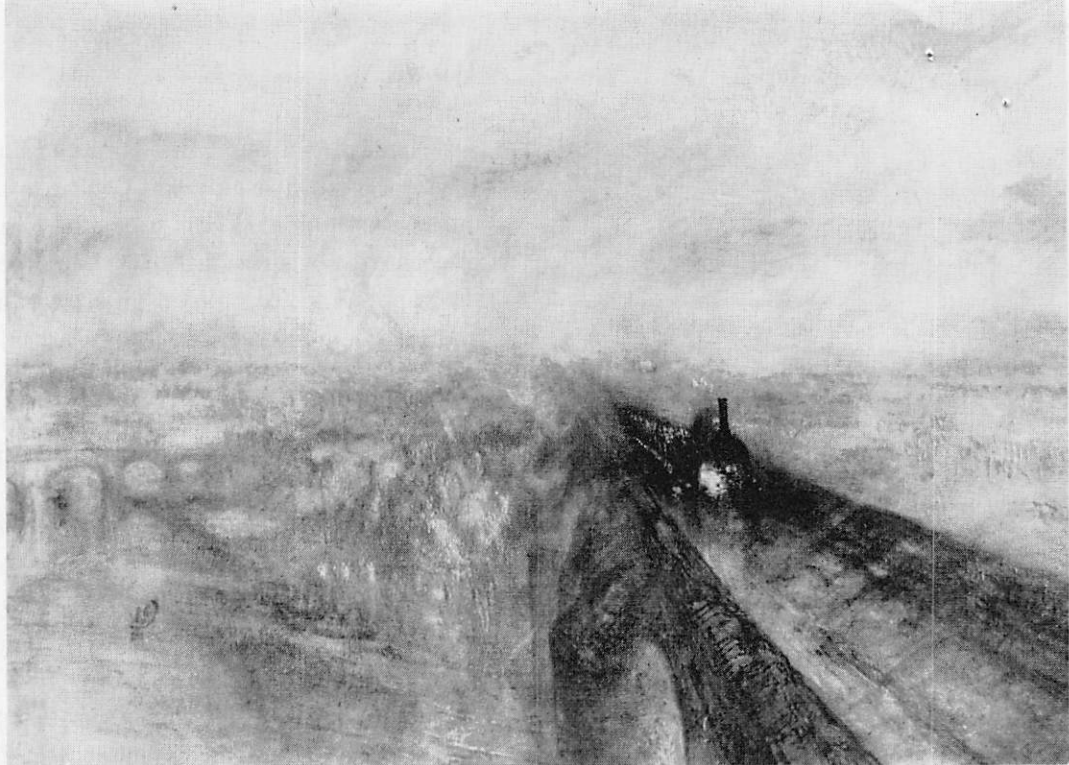
Trains in art

Manchester Valley (1914-1918) by Joseph Pickett, opposite. The Museum of Modern Art, gift of Abby Aldrich Rockefeller. At right, The Third-Class Carriage by Honoré Daumier, The Metropolitan Museum of Art, H. O. Havemeyer collection, the bequest of Mrs. H. O. Havemeyer, 1929.

■ When railroad trains first appeared on the human scene in the 1830s artists were at first puzzled by what to make of the strange, smoky and noisy contraption. Would it be a boon or a bane to mankind and would it deface the beauties of nature which they were fond of painting? ■ The first appearance of railroads in art was derisive: a newspaper cartoonist in the 1830s using the name of Shortshanks (Robert Seymour) portrayed a locomotive like a teapot ridden by flouncy matrons. Others showed people being smothered in smoke and soot or bounced around in jolting carriages. ■ But gradually the railroad captured the imagination of writers and artists. Henry David Thoreau, although the champion of the simple life close to nature, wrote: "When I hear the Iron Horse make the hills sound like thunder, shake the earth at his feet, breathe fire and smoke from his nostrils, it seems to me as if the earth had got a race now worthy to inhabit it." ■ The steam engine was appropriated by the romantics and the earliest trains were given the names of Greek gods. Later they were named after stars (Morning Star, Dog Star, Shooting Star) and still later were called Ivanhoe, Rob Roy and other Sir Walter Scott characters. ■ A classic work by the English romantic painter Joseph Mallord Turner (1775-1851) was his *Rain, Steam, Speed*, then considered daring in both subject and style. Barely visible amid smoke and fog on a distant high bridge is his tall smoke-stacked engine. Turner was not interested in the train as a piece of machinery but he treated it like one of the forces of nature he was then trying to symbolize in paintings of stormy seas. Also fascinated by the clouds of smoke eddying from a puffing locomotive was impressionist Claude Monet working in Paris in the 1870s and 1880s. In a famous series he set up his easel in the Gare St. Lazare and other Parisian railroad stations to capture the strange light produced by the high glass and iron roof of stations in that era and the luminous atmosphere created by swirling smoke. ■ The human drama of a train journey was



Two early British graphic references to railroading were Joseph Mallord Turner's *Rain, Steam, Speed, with the powerful train emerging from the vaporous atmosphere of the picture*, and *Locomotion* by Robert Seymour (or Shortshanks), a caricature of steam as power. Metropolitan Museum of Art, a gift of Paul Bird, Jr., 1962.



the focus of France's social satirist Honoré Daumier. In his *Third Class Carriage* the passengers show varied reactions to the unaccustomed environment of the almost grim railway carriage which they share for a time.

A distant train that added a note of movement, change and sometimes mystery to a landscape appeared in many paintings around the turn of the last century. An early example was the work of Vincent Van Gogh: when he was living in the yellow house that he shared for a time with Paul Gauguin in Arles in the south of France, he sketched and painted the trains puffing across a railroad bridge at the end of the village street. Several years later when he lived in Auvers un-

der the care of his compassionate doctor friend, Dr. Paul Gachet, he painted (in a palette of greens and golden tans touched with reds) a vast sweep of furrowed fields with a horse and buggy traversing the mid-distance road and a long train forming a ribbon of movement on the horizon.

The train as a dreamlike image of loneliness and mystery was introduced in the years just before and during World War I in the haunting paintings of Giorgio de Chirico, a young Italian whose paintings were to inspire the French surrealists. In Paris in 1911 he caught the attention of artists and critics with his pictures of deserted Italian piazzas swept by ominous shadows and pervaded by a sense of melancholy; a mysterious note was a train puffing in the background.

A morbidly sensitive youth, De Chirico had delved into the writings of Friedrich Nietzsche and derived from them an idea that everything in the world could be regarded as an enigma. From that time his endeavor was to produce the kind of painting in which mood and dreamlike suggestion would be more important than representation of factual reality. The locomotives that appear in the far backgrounds of arcaded vistas he produced in Paris and Ferrara might have been inspired by childhood memories on the Thessalonian coast of Greece where his father, an engineer, was in charge of building a railroad.

By locating his train in the distance and usually having it partly concealed by a wall, De Chirico played down its mechanistic aspect and succeeded in making the train the only living

presence in a scene otherwise silent and dead, dominated by shadowy arcades and enigmatic statuary in the foreground.

For the surrealists whose fame and influence developed about a decade later in the mid-twenties the locomotive and certain other machines was considered an erotic symbol; it constantly turned up in the dreams of German-born Max Ernst. For Marcel Duchamp the disquieting experience of a train journey launched him into early explorations of pictures composed of a maze of planes.

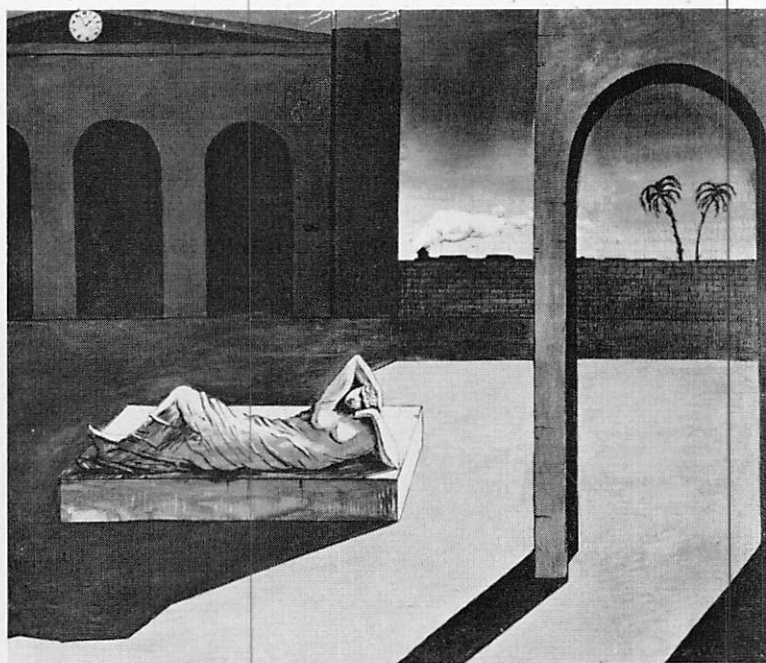
The surrealist who has been most consistently obsessed with trains is Belgian-born Paul Delvaux whose other constant obsession is with a type of gravely beautiful young woman who wanders nude or lightly draped as if in a trance through public locales of the period around the early 1900s. Still active today he continues to produce these dreamlike vignettes crammed with old-fashioned trains and railroad stations which evoke the nostalgia of partings. The precision of his execution recalls the masters of his native Flemish tradition but there is a classic quality in his grave nudes and solemn structures. In a monumental recent canvas the moonlit wanderings of a statuesque, bare-breasted young woman ended at a maze of railroad tracks by an old station. Puffing there are an ancient locomotive, a freight train and brightly illuminated passenger coaches rendered in meticulous detail against a constellation of signal towers.

In striking contrast to romantic trains is the famous *Armored Train* painted in 1916 by Gino Severini, a sleek and fearsome mechanism bristling with guns as it speeds toward the front. Like other young artists who had signed the *Manifesto of the Futurist Painters* in Milan in 1910 Severini believed that their mission was "to glorify the life of today, incessantly and tumultuously transformed by the victories of science..." At that

time the futurist poet Marinetti had written that a roaring motor car, hurtling like a machine gun, was more beautiful than the *Winged Victory* of Samothrace.

Some of the most original and lovingly painted trains in modern art came from the brush of an American (born in 1871) artist transplanted to Germany when he was 16 by his family of concert musicians. He was Lyonel Feininger who achieved an early fame as a creator of fairy-tale-like comics for newspapers in Germany, in Paris and for the *Chicago Sunday Tribune*.

In the early 1900s Feininger was suffering acutely from homesickness (he was kept in Europe both by his marriage and career); it was then that he launched into a series of oil paintings of the old-time trains he had watched as a child near his home overlooking the East River. His ancient locomotives were often shown at a standstill being watered or serviced by quaintly drawn trainmen; they were given great animation but were portrayed with a careful regard for differences in design of their towering conical or upright stacks and cowcatchers. They were endowed with so much personality that it was said that his engines



The Soothsayer's Recompense, 1913, by Giorgio de Chirico. Louise and Walter Arensberg collection, Philadelphia Museum of Art. At left, Old St. Lazare Station, Paris, 1877, by Claude Monet. Mr. and Mrs. Martin A. Ryerson collection, courtesy of The Art Institute of Chicago.



were rendered with more sympathy than his human figures.

Partly to divert his young sons he began at the same time to fashion from wood and other materials accurate but generalized models of ancient trains; an admiring friend proposed to reproduce these models on a mass scale at a Berlin factory but the outbreak of World War I dashed these hopes. The hand-carved model locomotives have now entered museum collections.

AMERICA. That the train was a colorful part of the romance of the frontier with its own legends, songs and folk heroes (Casey Jones) was a fact fully exploited by the pictorial news-reporting firm of Currier and Ives; in their lithographs (at first hand-colored, later color-printed) they recorded every picturesque train triumph and disaster. One of their all time hits was a large color print depicting two smoke-belching expresses racing side by side through a moonlit night.

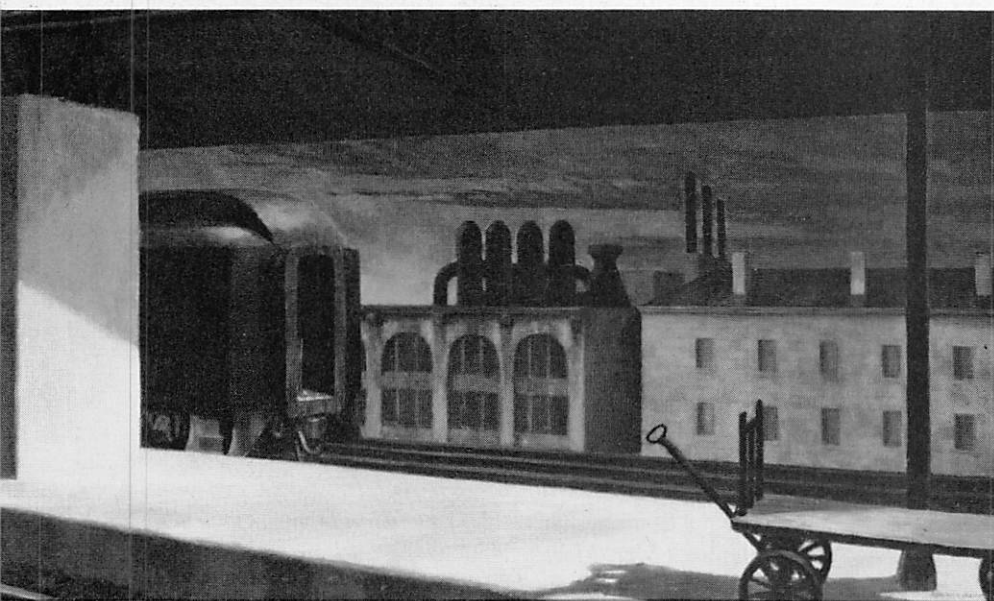
The continent-spanning train was a logical subject for those American artists of the 1930s who were determined to break away from European influences and styles and develop a native idiom devoted to the American scene. In the Middle West Thomas Hart Benton, son of Congressman Maecenas E. Benton and grandnephew of the Senator Thomas Hart Benton who had been a power in the administration of Andrew Jackson, took as his special province the celebration of American folkways and illustration of native ballads. Almost as animated as his muscular cowboys and Indians, black preachers and riverboat gamblers, was his popular picture of a train careen-

ing over a trestle wreathed in a serpentine of black smoke.

A gentler, more melancholic poetry marks the train images of Charles Burchfield who sometimes placed a freight car on a siding in his wintry scenes of bleak back streets of Ohio towns, its looming bulk a foil to the bleak façades of Victorian and clapboard shacks. With knowing handling of dark shadows he could suggest a symbolic meaning in a painting of a freight lumbering under a bridge near his native Buffalo.

The train as an integral part of the industrial scene was the special preserve of Charles Sheeler; in his crisply contoured paintings the engine, its gleaming tracks and the factory complex in the background take on a pristine, almost classic beauty. One of his more abstract compositions done in 1922 was *Church Street El*; by the device of adopting a high bird's-eye view he reduced the elevated train and surrounding buildings to a neat geometry of hard-edged shapes. In *An American Landscape* and other industrial subjects he painted in the 1930s trains and tracks as a sweeping horizontal or diagonal element; seen from a distance they provided a foil for towering silos and refineries. In the most famous train picture by this precisionist, *Rolling Power* (1939) Sheeler examined the underpinnings of a locomotive engine from a view so close-up that he was able to depict with relentless clarity every detail of pistons and wheels.

At an opposite pole from the stilled, meticulously detailed trains of Sheeler was the elevated train painted by American expressionist John



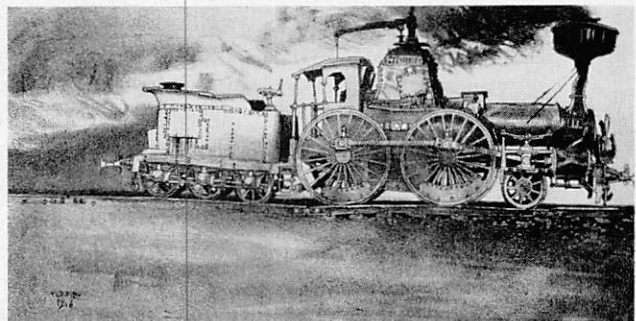
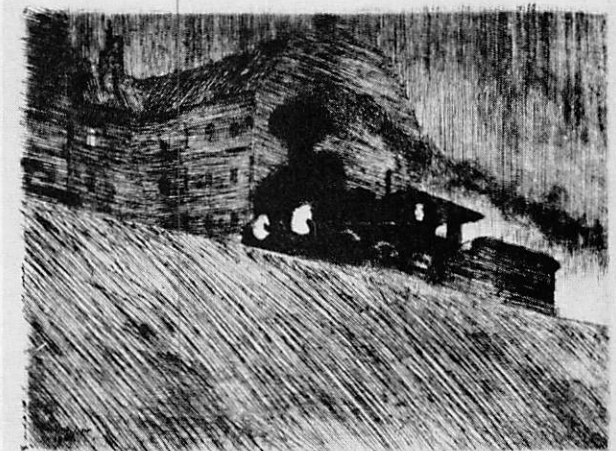
Opposite, from top: American Landscape, 1930, by Charles Sheeler and two contrasting graphics by Lyonel Feininger, both done in 1906. All are in the collection of the Museum of Modern Art. The works by Feininger were presented to the museum by Mrs. Lyonel Feininger.

Dawn in Pennsylvania by Edward Hopper evokes a bleak unpopulated railway station in the early hours. Collection of Dr. and Mrs. James Hustead Semans.



Marin set down in swift diagonal strokes of a wide watercolor brush: the train is seen as a blur and slash of movement cleaving the towers of midtown Manhattan. The rush and energy of the "El" was also caught by John Sloan and the loneliness of its deserted platforms by Aaron Bohrod. Reginald Marsh who sometimes used the underpinnings of the elevated as a background for his pictures of derelict characters and Bowery bums also painted locomotives with a romantic accent on mood.

For tough-minded American realist Edward Hopper, the railroad train was an integral part of the harsh native landscape; over a lifetime he returned to it again and again to record its exterior and interior with unflattering honesty, often conveying a subtle sense of alienation. In *Compartment C Car 293* a hard artificial lighting underlines the isolation of its single woman occupant with head downbent and oblivious of the landscape glimpsed from the window. The starkness of a strange city railroad station at sunrise is projected in *Dawn, Pennsylvania* where the deserted platform and empty baggage wagons are viewed as they might be seen by a sleepy traveler awakened by the jolt of a stop to wonder

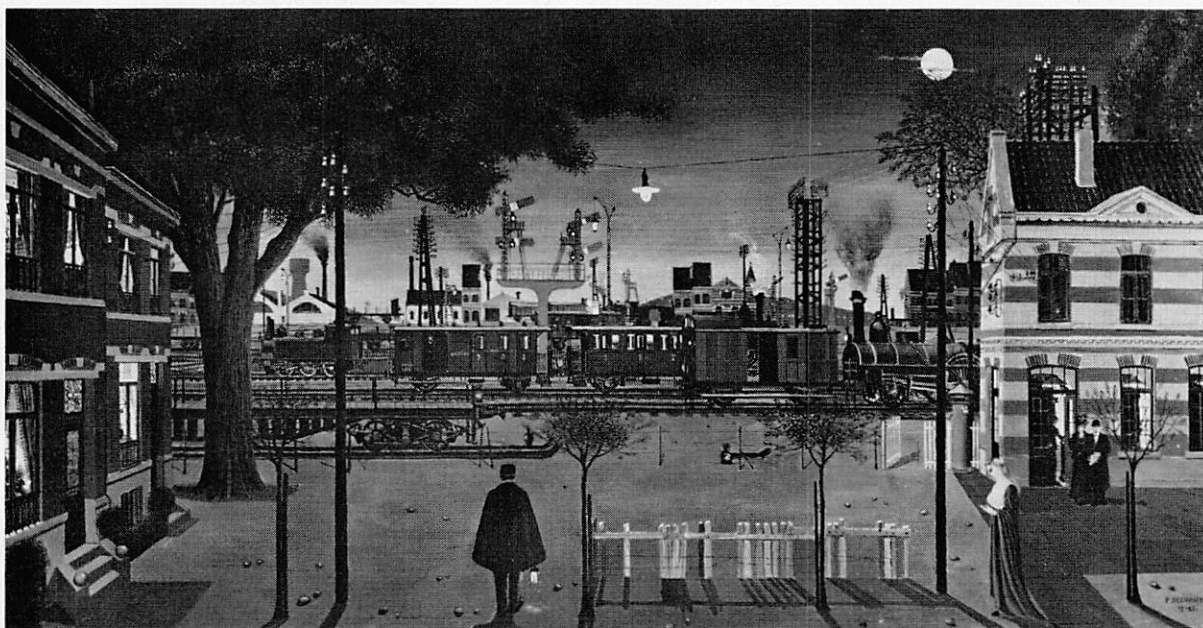


where they had arrived. In his *Railroad Sunset* a bleak, level stretch of track is broken only by the starkly painted railway signal tower rising black against the rosy sky.

Unlike his more romantic contemporaries Hopper in his pictures showed the effect of the railroad on the towns and cities through which it passed. A dramatic expression of the impact of extending railroad tracks on real estate was his 1925 *House by the Railroad*, a once grand Victorian mansion with high mansard roofs and gaping windows testifying to its present dilapidation.

relics of the iron horse, while his brother Theodore Lux Feininger memorialized them in paintings of brooding eloquence.

The train image has often been used by artists to express a subjective feeling or project a personal style but one of the most moving train pictures in modern art came from the painstaking brush of a man whose only aim was to set down as objectively and accurately as possible his recollection of the first train to travel through the beautiful countryside around his home in New Hope, Pennsylvania. This was self-taught artist




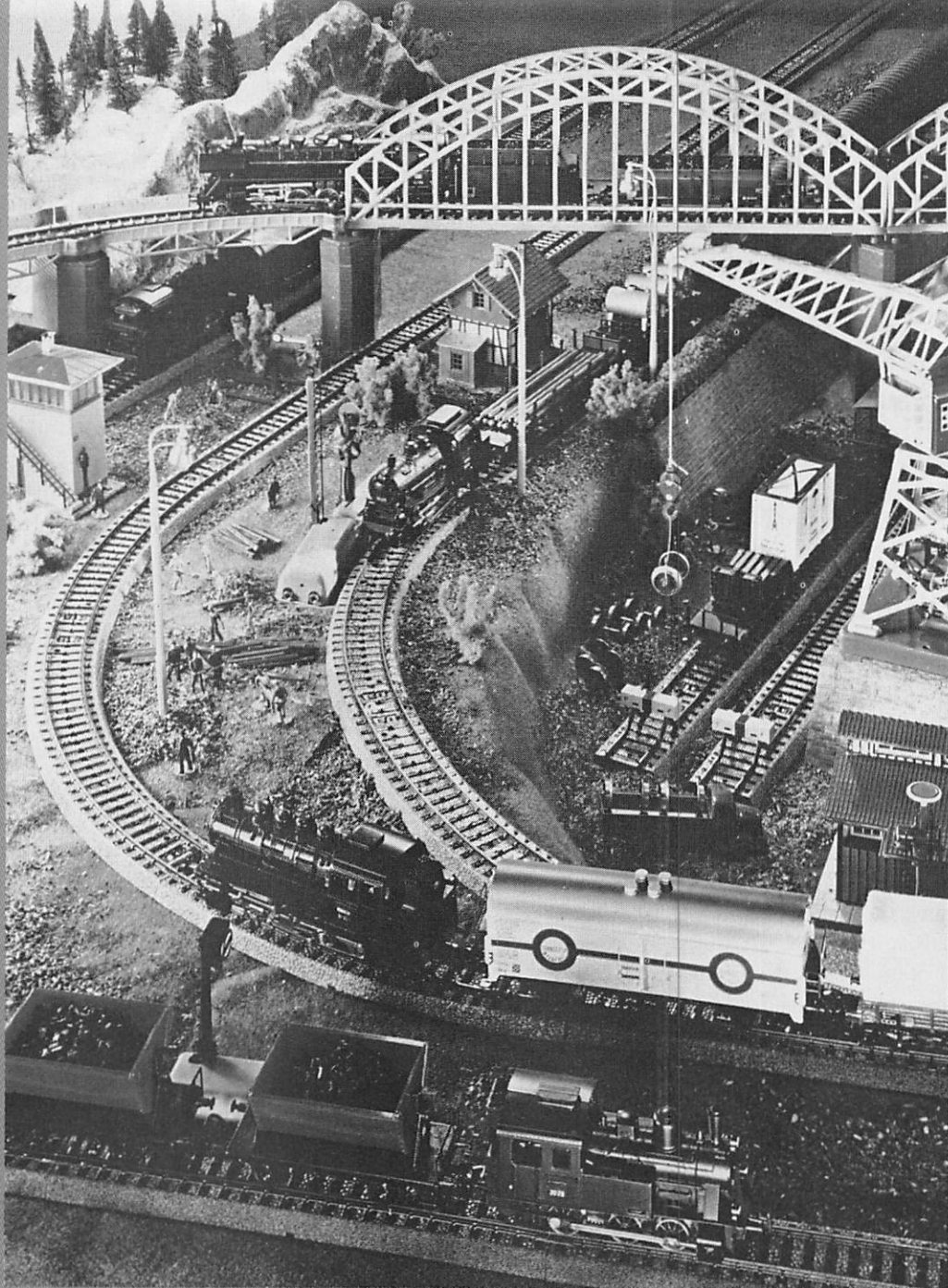
Trains, railway stations and the varied equipment of the railroad are important in the iconography of the paintings of surrealist Paul Delvaux, such as Le Veilleur No. 2. The Staempfli Gallery, New York.

The seamy side of the poverty areas around train yards and freight sidings was also caught during the Depression years by social satirist Ben Shahn in his *Scott's Run, West Virginia*, its numbered freight cars rumbling past a line of shacks watched by a trio of gaunt-faced and apparently unemployed workmen, a reminder that in those years sometimes the only avenue of escape from dismal circumstances was "hopping a freight."

In the last two decades as the attention of younger artists often moved to the lore of the highway and the airplane there remained a few whose imagination was haunted by the old engines. Among the most eloquent were the sons of Lyonel Feininger, like their father railroad buffs and artistic creators. In sensitive and moody photographs Andreas Feininger recorded against a background of the locomotive graveyard ghostly

Joseph Pickett who had been a barge builder, carpenter and general storekeeper. *Manchester Valley* his large, crisply patterned train picture was painted late in his life (he died in 1918); during his earlier years his main painting activity had been making landscape backgrounds for shooting galleries which he operated at country fairs. By arranging the remembered scene in tiers Pickett was able to show the hill with its orchard and schoolhouse and the trim brick houses of the valley; in the lower foreground racing along by the river and waterfall was placed with loving detail the spanking new red and green train on its pioneering run.

SUMMING UP. By California poet Joaquín Miller: "There is more poetry in the rush of a single railroad train across the continent than in all the gory story of burning Troy." 



LILLIPUT

MD

HOBBIES

Freight train No. 23 was scheduled on the Train Order to depart at 9:44, and already the stubby yard engine was puffing jets of steam as it collected the various components of the train, pushing and pulling them into their proper positions according to the yardmaster's Switch List: four reefers (refrigerator cars) containing fresh fruits and vegetables, five flat cars stacked with uncut logs, three gondolas filled with grain and, at the end, a bright red crummy (caboose) bearing in ornate black and gold letters the name of the line, the Western Diminutive Railroad. ■ At their posts were engineer, fireman, brakeman,

ON WHEELS

towerman and other operating personnel; also, this being an important run, the president of the entire system was on hand. Now, with the freight made up, the big diesel slid out of the roundhouse with its sibilant hiss, ran through a siding and backed up to couple to the freight. With the "fast clock" showing exactly 9:44 the towerman flashed green and Freight No. 23 moved out of the yard and onto the main line through an intricate system of switches, picking up speed slowly but steadily as it moved west across the flat lands toward the distant mountains.

The only somewhat strange feature of this entire intricate operation was that the train was about six feet long and all the trainmen were adults, some of them six feet tall.

RAILROAD FEVER. The endlessly fascinating world of model railroading has made hopeless addicts of some 150,000 Americans. A seeming anomaly in an era when railroads are losing out to buses and planes, model railroading continues to exert its enchantment; about a third to half of all train hobbyists are adults, who may have purchased layouts for their sons but remained intrigued enough to become involved in the complex business of constructing and operating miniature railroads.

The seriousness of the model railroader is not measured by the size of his operation: layouts range from \$20 sets of tabletop size that embrace only a single circular or oval track with an engine, boxcar, passenger coach and caboose, all the way to expensive and extensive multiple-track systems that cover an entire attic or cellar. Rolling stock may include everything from steam "locos" of Civil War vintage to modern stream-

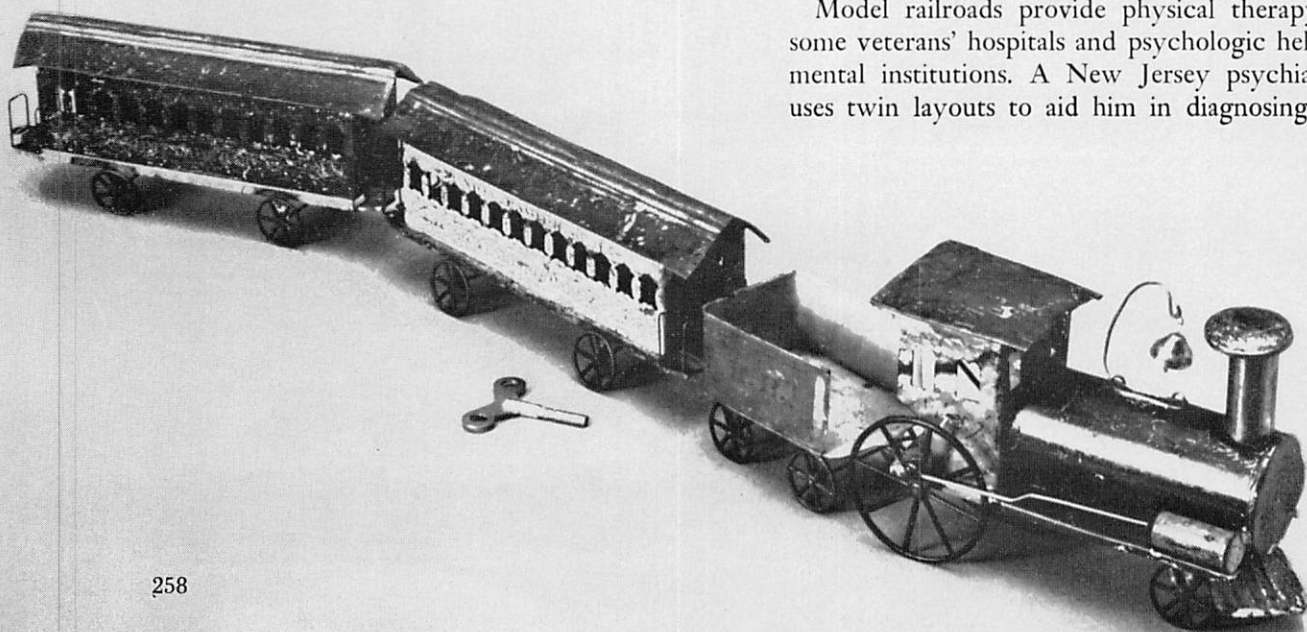


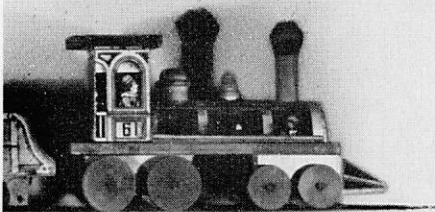
lined diesels, ornate Pullman cars and auto-loaders, the system replete with intricate switches and crossings, automatic light signals and semaphores, all against a realistic animated diorama that may contain water towers, bridges, entire villages, farm animals and people, and even tiny billboards along the right of way to catch the eye of the Lilliput passengers aboard the coaches.

Afficionados say that the concentration needed to operate an elaborate system offers total relaxation and an escape from the demands of real life. More than a third of all adult modelers are business and professional men, including numerous physicians. Famous devotees have ranged from George V to Walt Disney to Hermann Goering, who allegedly had a penchant for arranging dramatic wrecks.

Hobbyists, working alone or as members of the hundreds of model railroading clubs in the United States, delight in making and controlling a mini-world of their own, answerable to no outside forces, with everything ordered and arranged precisely as they wish. Youngsters can enter a simulated adult world, and not a few wives and mothers have been willingly impressed into service, often beginning their railroading careers by constructing and painting papier-mâché mountains and plaster plains, making silver foil streams and styrofoam trees, cutting and laying strips of carpet, cork or rubber for roadbeds.

Model railroads provide physical therapy in some veterans' hospitals and psychologic help in mental institutions. A New Jersey psychiatrist uses twin layouts to aid him in diagnosing the





Frontispiece is a modern model railway layout of HO gauge with a scale ratio of 87:1. Some antique model trains include wooden rolling stock, left, which was probably a pull toy, a cast-iron locomotive and tender with a stamped-sheet passenger car of the early 1900s, below, and an early train of the 1860s with clockwork mechanism, opposite bottom.

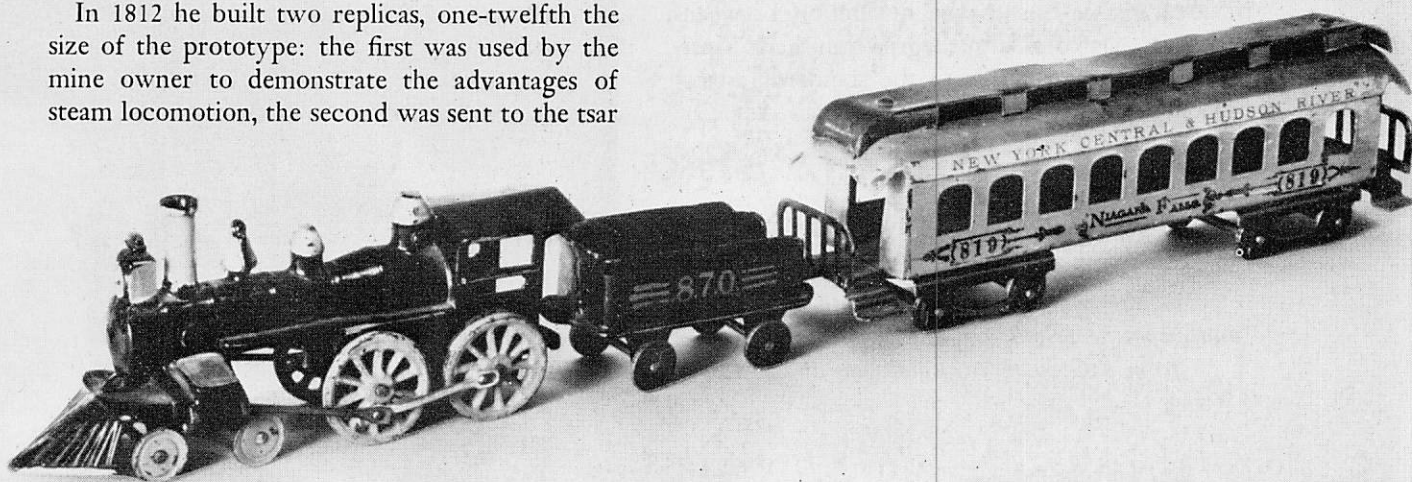
marital difficulties of his patients, the degree to which a couple cooperate in running their separate railroads provides insight into their marital synchronization.

IRON (HOBBY) HORSE. No one knows who made the first model railroad, but they began to appear in several countries shortly after railways became an established form of transportation. Some historians believe that the first model locomotive was built for practical rather than pleasurable purposes by Matthew Murray, who designed locomotives for a coal mine near Leeds, England.

In 1812 he built two replicas, one-twelfth the size of the prototype: the first was used by the mine owner to demonstrate the advantages of steam locomotion, the second was sent to the tsar

In the 1870s appeared the live steam locomotives, the first truly self-propelled model trains, and many of the steamers ran on crude tracks, steel strips attached to boards. Despite maternal anxiety there were few serious accidents, as most models were equipped with safety devices that permitted boilers to split their seams with a slow hiss rather than to explode, but steamers tended to leave pools of water in their wake and frequently jumped the tracks, spilling flaming alcohol on furniture and rugs.

By 1890 a youngster with three dollars could



of Russia in the hope of interesting him in the value of railways. In the United States promoters used large-sized models to raise funds for railroad construction.

By the 1830s manufacturers were turning out crude and inexpensive locomotives and freight cars made of wood, often decorated with colorful lithographs, designed to be pulled across the floor by a string. After the Civil War came tinplate* clockwork trains, but they did not run on tracks. Others were friction powered: heavy flywheels were mounted on an axle, the ends of which pressed down on the drive wheels; when the locomotive was pushed along the floor for some distance momentum was built up in the flywheel and transferred to the drivers.

* Tin-coated mild steel.

buy a complete train outfit consisting of an alcohol-fired steam locomotive, tender, coach and track, or he could obtain a set as a premium for selling subscriptions to the *Youth's Companion* or the *Ladies' Home Journal*.

Thomas Davenport of Brandon, Vermont, a blacksmith, is credited with building the first electric locomotive in 1835, and around midcentury the first complete electric railroad system, including automatic signals, was built by the Buffalo physician A. L. Henderson. The early electric trains were powered by large wet-cell batteries that sometimes spilled their acid, wreaking havoc on clothing and carpets.

By 1900 the commercial production of electric models was booming, and the growing hobby was further stimulated by the development of

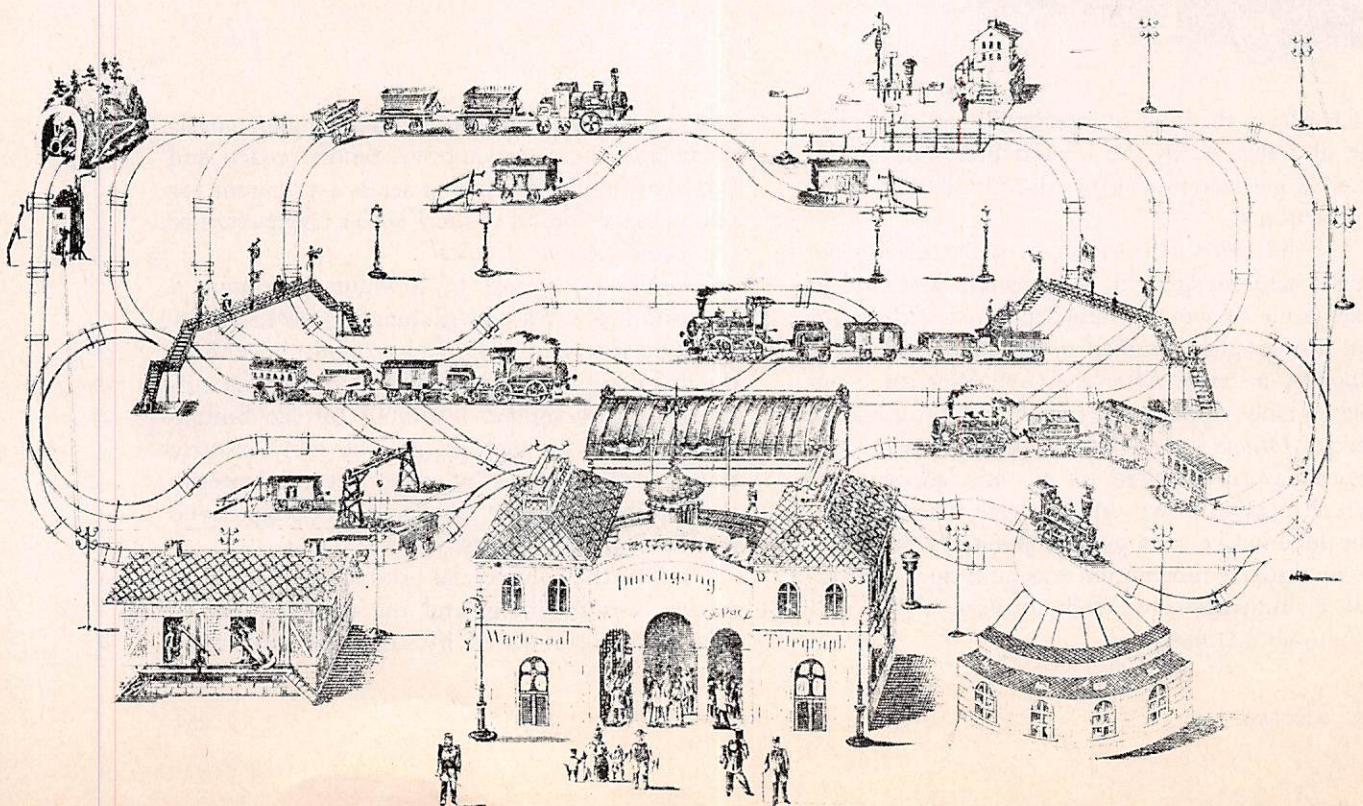
transformers that permitted operation from a house current. Transformers, with the sequence switch, made the hobbyist a more active participant; now he could function as both engineer and dispatcher in shifting rolling stock and making trains run backward and forward. Shortly manufacturers began turning out accurately scaled models of famous trains and added a high degree of realism by means of such refinements as automatic coupling, whistles, smokestacks.

GAUGE AND SCALE. Model trains fall into two broad groups: tinplate and scale. In the early days, tinplate trains were provided in sets, in finished, ready-to-run form, while scale equipment was for the most part supplied in kit form to be assembled by the hobbyist.

The scale equipment was more accurately proportioned to prototype equipment, hence its name, but today many scale manufacturers offer completely assembled trains and much tinplate is built to accurate scale; thus the distinction between the types has to a large degree vanished. Most scale equipment is made to the standards established by the National Model Railroad Association.



Devoted model railroaders assemble their own equipment or build it themselves, top, and with elaborate equipment function both as engineer and dispatcher, right. Engraving, below, is a page from a German toy catalogue of the 1890s.



tion to assure interchangeability between the different makes. (The NMRA links enthusiasts all over the country, holds clinics, gives technical advice, sponsors an annual convention.)

Scale indicates the proportionate size of the model to its prototype, while gauge refers to the distance between the inside edges of the running rails, but in actual practice the two words are often used synonymously. American railroad tracks measure 4 ft. 8 in. between rails and models are scaled down from this size. Originally there were several different scales but today all but a few are considered obsolete, to the degree that parts are difficult to replace.

The largest is 0 gauge, with a scale ratio of 43:1. Next smallest is S. gauge at 64:1, followed by 00 at 76:1. Far and away the most popular is HO, half the size of 0 gauge at 87:1; it gives more trackage in a given space and is therefore favored by apartment dwellers. The TT gauge (letters mean table top) is scaled at 120:1 and the tiny N gauge, at 160:1, is small enough to set up a complete railroad empire on a ping-pong table; expected to be on the market in time for Christmas

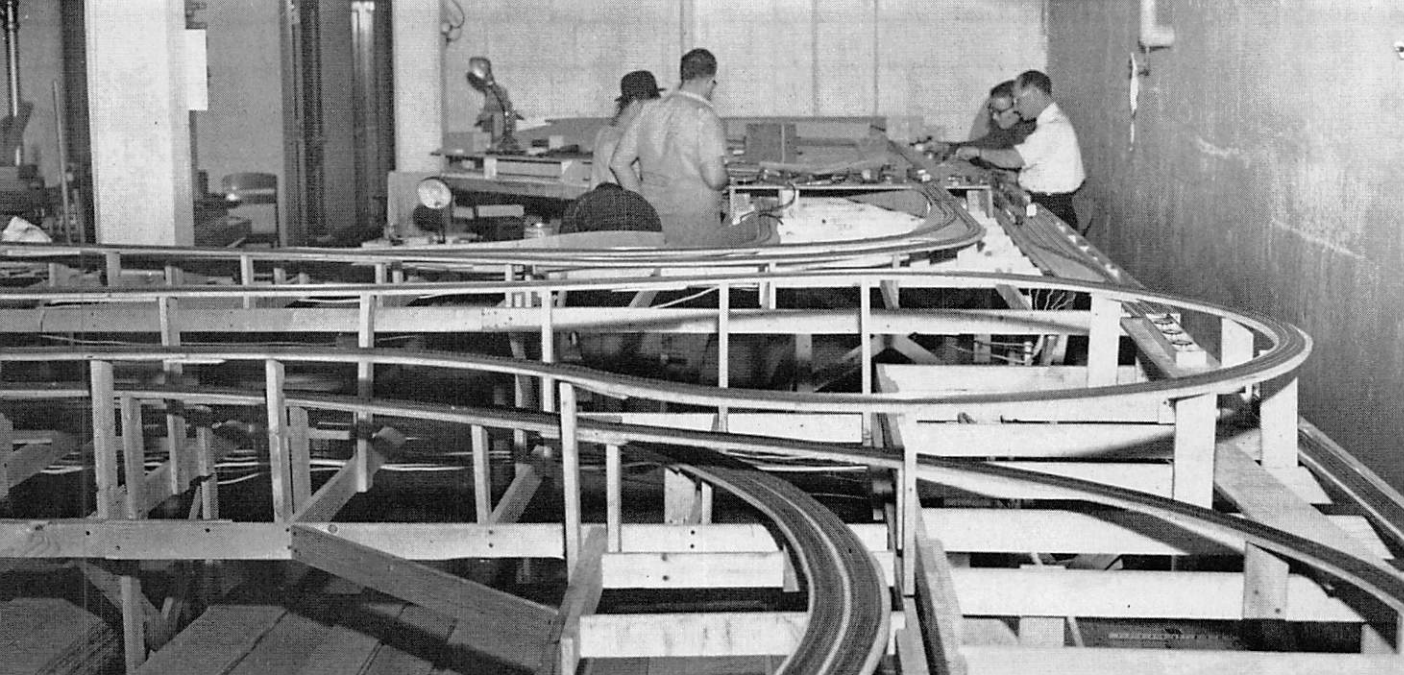
shopping is the new Z gauge, half the size of N and a remarkable example of miniaturization.

BUILDERS. Readymade layouts needing only to be assembled are by far the largest sellers, but some do-it-yourself railroaders build their own equipment, hence their appellation as "scratch-builders." Most scratchbuilders are content to make only part of their equipment and buy such intricate parts as electric motors, bearings, wheels, gears; but a few highly skilled craftsmen fabricate entire trains without using any commercial items; they think nothing of devoting 2000 man-hours to the building of a locomotive. Such precision work built to exact scale requires considerable research; plans are obtained from the firms that made the original prototypes, and the model railroading press, both books and magazines, offers line drawings and photographs by which the hobbyist can duplicate the real thing.

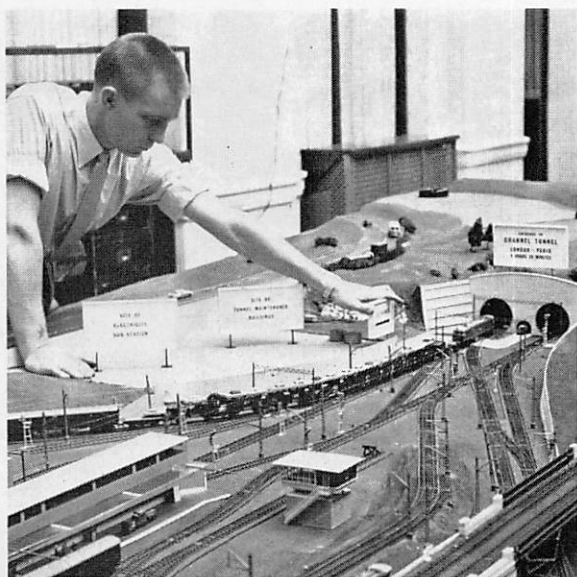
Some affluent scratchbuilders construct from gold and sterling silver, but most of them stick to nickel, silver, brass, copper, tinsplate. A big change in the last 15 years has been the introduction of plastic models; injection molding made

Made in Britain is a seven-and-a-half gauge miniature of a New York Central woodburning locomotive dating about 1880 with the pulling capacity of more than a ton.





Patients and volunteers help construct the layout of the Hamburg area of the Gowanda-Buffalo Model Railroad at Gowanda (New York) State Hospital where the railroad is used in therapy. Like the first model trains built for practical purposes by Matthew Murray the train and elaborate layout, below, is a working model of the undersea railroad at the British end of the proposed English Channel tunnel.



precision casting possible and the newer plastics are durable and can be worked in accurate detail. While most hobbyists buy ready-made accessories, some modelers lovingly and laboriously build their own stations, warehouses and other buildings, modeled after actual structures or typical of a particular architecture; they have developed cunning techniques to give wood and metal a patina of age to resemble the chosen historical period.

REALISM. The driving force among true model railroaders is to see how closely their miniature trains can be made to resemble and operate like

their full-sized prototypes. Manufacturers spend considerable time and money to ensure authenticity, down to the exact number of rivets on a locomotive and the sound of a whistle on a prototype; steam locomotives puff in synchronization to the speed of the engine. A dedicated modeler will operate with printed schedules, correspond with other modelers on his personal letterhead (Looville and Nawleans RR); some go so far as to program a computer to print out car movement instructions.

Accessories that add realism to the background include whistle signs, low bridge warnings, mileposts, crossing warnings, section-gang tool boxes and "No Trespassing" signs along the right of way. Realists never touch their rolling stock by hand; in the event of a wreck they dispatch a derrick to rerail the cars.

Realism is the rule: the voices of tiny train announcers bawl out destinations and stopping points. Stockyards contain miniature steers awaiting transport; a cow may wander onto the track and delay the express for five seconds (proportionately one minute). A sawmill operated by remote control rips tiny logs, and work cars bring laborers who unload milk cans and other freight. One model railroad magazine straightfacedly advised its readers to build covered sheds at suburban stations because "it isn't fair to your passengers to make them wait in the rain."

SUMMING UP. In the jet age, mini-railroad fever continues to rise.

